SEPTEMBER | 1956

products finishing

FINISHES ON METAL PRODUCTS

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PRODUCTS FINISHING

finished to meet - AND SEAT - the public

American Seating Co. utilizes modern, conveyorized finishing methods . . . custom-developed Sherwin-Williams materials . . . to produce highly mar- and wear-resistant finished units on a high-speed, high-volume basis.

Public life is strenuous—especially so for public seating built for schools, auditoriums and public buildings.

No one is more aware of this than American Seating Co., "World's Leader in Public Seating." For many years they have utilized the technical service facilities of Sherwin-Williams Industrial Research Laboratories to help meet special problems . . . insure benefits of new developments in finishing materials and methods.

Whether your finishing operations involve appliances and metal products, or the finest wood finishing systems, you will find Sherwin-Williams Technical Service equally helpful on your own problems. Write The Sherwin-Williams Co., General Industrial Division, Cleveland 1, Ohio, or Montreal, Canada.

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INDUSTRIAL FINISHES

For more data circle 140 on Reader Service Card

PRODUCTS FINISHING — SEPTEMBER, 1956

												2nd Cover			3rd Cover			4th Cover		
1	15	29	43	57	71	85	99	113	127	141	155									
2	16	30	44	58	72	86	100	114	128	142	156	169	182	195	208	221	234	247	260	
3	17	31	45	59	73	87	101	115	129	143	157	170	183	196	209	222	235	248	261	
4	18	32	46	60	74	88	102	116	130	144	158	171	184	197	210	223	236	249	262	
5	19	33	47	61	75	89	103	117	131	145	159	172	185	198	211	224	237	250	263	
6	20	34	48	62	76	90	104	118	132	146	160	173	186	199	212	225	238	251	264	
7	21	35	49	63	77	91	105	119	133	147	161	174	187	200	213	226	239	252	265	
8	22	36	50	64	78	92	106	120	134	148	162	175	188	201	214	227	240	253	266	
9	23	37	51	65	79	93	107	121	135	149	163	176	189	202	215	228	241	254	267	
10	24	38	52	66	80	94	108	122	136	150	164	177	190	203	216	229	242	255	268	
11	25	39	53	67	81	95	109	123	137	151	165	178	191	204	217	230	243	256	269	
12	26	40	54	68	82	96	110	124	138	152	166	179	192	205	218	231	244	257	270	
13	27	41	55	69	83	97	111	125	139	153	167	180	193	206	219	232	245	258	271	
14	28	42	56	70	84	98	112	126	140	154	168	181	194	207	220	233	246	259	272	

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4	18	32	46	60	74	88	102	116	130	144	158	171	184	197	210	223	236	249	262	
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6	20	34	48	62	76	90	104	118	132	146	160	173	186	199	212	225	238	251	264	
7	21	35	49	63	77	91	105	119	133	147	161	174	187	200	213	226	239	252	265	
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9	23	37	51	65	79	93	107	121	135	149	163	176	189	202	215	228	241	254	267	
10	24	38	52	66	80	94	108	122	136	150	164	177	190	203	216	229	242	255	268	
11	25	39	53	67	81	95	109	123	137	151	165	178	191	204	217	230	243	256	269	
12	26	40	54	68	82	96	110	124	138	152	166	179	192	205	218	231	244	257	270	
13	27	41	55	69	83	97	111	125	139	153	167	180	193	206	219	232	245	258	271	
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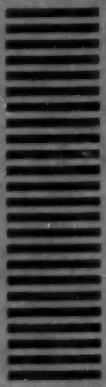

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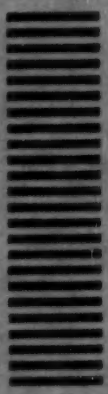

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makes your product LOOK BETTER LAST LONGER

There's a CrysCoat Process to suit your set-up

1. **Zinc phosphating in spray machines**
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3. **Iron phosphating in spray machines**
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Each CrysCoat process forms an excellent foundation for paint. Each CrysCoat process protects against corrosion under the paint. Each CrysCoat process is easy to control. Each CrysCoat process is backed by nationwide Oakite service that guarantees satisfaction.

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Resists Corrosion, Assures Lasting Paint Adhesion

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"Tumblex* 'T' has a definite place in our tumbling department"...

That's the report from a leading pump manufacturer — when the new Norton bonded, triangular-shaped abrasive, gave results like these:

100% increase in barrel payload and 80% reduction in tumbling time. A sandblast operation eliminated and hand deburring reduced about 75%.

The uniform triangular shape and size of Tumblex "T" abrasive prevents wedging in recesses . . . Made of famous bonded ALUNDUM* abrasive, it cuts fast, with no cutting compound needed . . . It provides maximum surface contact with parts being processed, for shorter cycles and larger payloads . . . It wears evenly, and when worn down can be used on parts requiring a smaller abrasive . . . Its lightness means less weight required to fill the barrel.

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For more data circle 142 on Reader Service Card

ALWAYS FINISHES FIRST

—and saves on compound—it's "metered"!

Liquimatic

the perfect liquid compound for all metal finishing

How much of the compound in your buffing room is wasted . . . in the nubbin pile, or in "over-heading" buffs? There's a way to "meter" the compound you use—the Liquimatic way. An electrically timed system in the Liquimatic Process feeds the exact amount of liquid compound for the exact cut you need. While compound is being saved, buffs are being saved too . . . continual lubrication extends buff life up to 500%.

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Check the other features of Liquimatic . . . then write today for your free copy of Liquimatic's big, new folder that tells the whole cost-saving story of Liquimatic in your buffing room.

Liquimatic . . .

gives more buff mileage

These additional Liquimatic features mean real savings in terms of time, money, safety—

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- completely automatic
- fast cutting
- easy cleaning
- non-settling
- high flash point
- long storage life
- sprayable viscosity
- adhesive slow-wearing buff face

PLATEMANSHIP

Your H-VW-M combination—of the most modern testing and development laboratory—of over 80 years experience—in every phase of plating and polishing—of a complete equipment, process and supply line for every need.

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M. L. FORNEY, *Publisher*

DON'T HESITATE!

MICCROSOL SPRAY S-2003 IS READY . . . to show YOU the way to profitable spray jobs

You can apply S-2003 with conventional spray equipment.

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You can use S-2003 in all plating baths. It has the same toughness—chemical, corrosion, and abrasion resistance as Miccrosol E-1003. Our adhesive systems provide outstanding adhesion to metal surfaces.

Tanks Ducts and other Equipment

Solvent additives are not necessary. S-2003 is 100% solids and is sprayed as received. Time consuming and expensive adjustments are unnecessary. Problems of material instability and film cracking are eliminated. There is no solvent loss and less operator fatigue with Miccrosol Spray S-2003.

It's the ideal plastisol for spray applications.

IT'S TOPS!

Developed and manufactured by experienced platers

* WRITE FOR PARTICULARS ON COMPANY LETTERHEAD

MICHIGAN CHROME *and Chemical Company*

8615 Grinnell Avenue • Detroit 13, Michigan

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products finishing

Vol. 20 No. 12 September, 1956

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Published monthly with two issues in March and copyrighted (1956) by Gardner Publications, Inc., 431 Main St., Cincinnati, Ohio. Printed in U.S.A. Accepted as controlled circulation publication at Cincinnati, Ohio.

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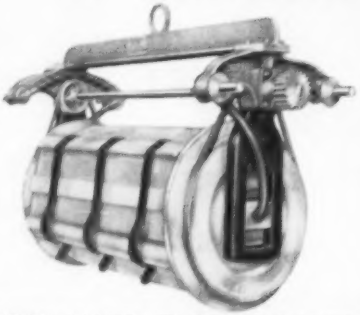


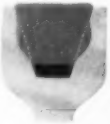
BELT DRIVEN PLATING BARREL

• Low initial cost • LOWEST possible maintenance • No cylinder gears • No cylinder bearings

Greater Current Carrying Capacity Which Lowers Plating Time and Cost

Stutz Belt Drive complete cycle Plating Barrel. This unit incorporates a cylinder of one piece Plexiglas construction, suspended and rotated by two V belts and arranged between cast steel guide frames protected with 5/16" thick special vulcanized hard rubber. For smooth barrel operation, saddle horns are located on 15" centers, 4 provided for maximum current. Cylinder door is heavily reinforced and is locked with vinyl chloride covered spring steel gung clamps. Cathode contactors are dangler type. These units made to fit most makes of plating tanks and furnished also with motor drives mounted directly on cylinder superstructure. Standard sizes 14" x 30" and 14" x 36" (I.D.). 12 additional sizes from 12" x 24" to 16" x 42" (I.D.). Standard perforations 3/32" round 3/16" centers. Patented dual hole for processing of extremely small parts available.

Specially designed counter pulleys of monel metal with deep dimples for positive grip against belt face.



This shows the belt expanding into the dimples of the driving pulleys. This action provides positive pull with no abrasion to the belt whatsoever.

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Serving Industry 35 years **GEO. A. STUTZ MFG. CO.**
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"Complete metal finishing equipment & supplies"

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products finishing

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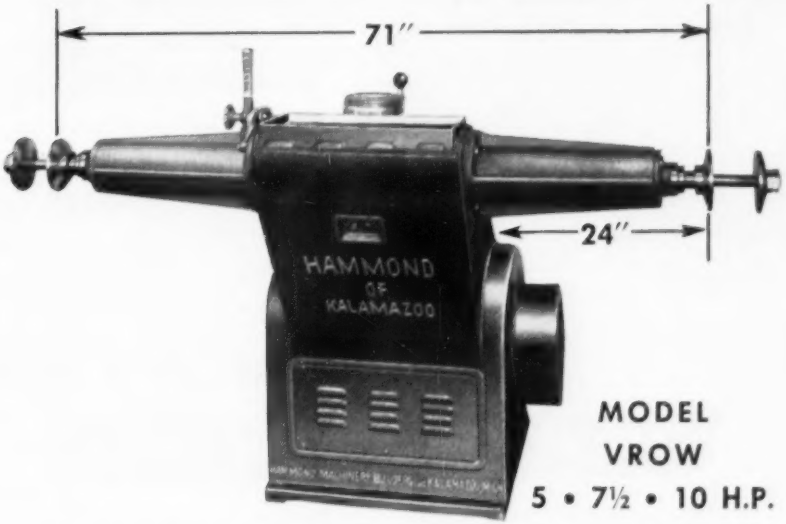
POLISHING AND BUFFING LATHE



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VROW
5 • 7½ • 10 H.P.

Ideal for bulky parts. Spindle overhang and extended bearing housings enable two operators to work without interfering with each other.

Hammond WIDE SWING Variable Speed and Single Speed Polishing Lathes are available with one or two *independent spindles.*

Other models available with a capacity up to 50 HP. *Write for catalog* showing America's most complete line of Polishing and Buffing Lathes.

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THER REACTRON DOES!

GERMANIUM OR SELENIUM TYPES

OPERATOR'S PANEL

DOES IT ALSO GIVE YOU:

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- Small, remote operator's panel
- Static saturable reactor
- Advanced magnetic amplifier design
- Fast response and wide control range

THER REACTRON DOES!

AND AT LOWER OVERALL COST

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THER REACTRON eliminates tap switches, vacuum tubes, motor driven brushes, arcing contacts, gears and other moving parts.

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THER REACTRON integrates control and rectifier in same cubicle—requires no heavy cable between rectifier cubicle and operator's panel—features compact "portable radio size" operator's panel that's readily mounted almost anywhere without requiring floor space.

It's THER . . . Whatever your D-C Requirement

THER ELECTRIC & MACHINE WORKS

ESTABLISHED 1915

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CHLOROTHENE

(1,1,1-trichloroethane, inhibited)

- **No fire hazard**
- **Extremely low toxicity**
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- **Rapid dry time**

Chlorothene is the answer to the search for a cold cleaning solvent that eliminates fire hazard—that does not require heat—that equals carbon "tet" in cleaning power and yet is only 1/20 as toxic.* Chlorothene has no flash point—no fire point. Chlorothene quickly cleans common metals, including aluminum, with relative safety from corrosion.

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Service begins before installation to make sure the proper PREP PRODUCTS and PROCESS is selected for your metal cleaning or phosphate coating requirements before paint . . . And Neilson service continues after the sale to assure you of maximum performance and economy! Why not benefit from Neilson's 25 years of metal conditioning experience?

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GALVAPREP
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Metal Conditioning
Rust Removing
Phosphatizing
products for
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ZINC, CADMIUM, etc.

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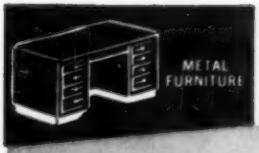

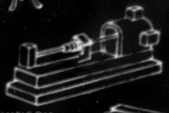

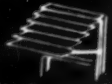

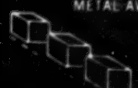

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touch up your products anytime, anywhere... factory-perfect job every time!

YOUR OWN FINISH FROM YOUR OWN SOURCE

In use by industrial leaders in every field, the Sprayon Self-Spraying Touch Up Tool ends your touch up problems. Protect the eye-appeal of your product—get an extra bonus of customer satisfaction—and do it with big savings in time, cost and equipment investment! Sprayon goes right to your source for your own touch up finish, custom-loads the Tools for you under your own label. Exclusive Sprayon features mean even unskilled help do a factory-match job in minutes...for pennies. Use it anywhere—from your own production line to the final customer. Nothing else to buy—it's a disposable low-cost constant-pressure spray gun—a complete paint shop in a can!

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SPRAYON *Self Spraying* TOUCH UP TOOL

For more data circle 151 on Reader Service Card

Barrel Plating by Stevens Really Cuts Costs

Since Stevens first introduced the Automatic Barrel machine scores of industries have enjoyed these operational advantages. Check them against your present operations.

MINIMUM LABOR REQUIRED — In most cases, one unskilled employee can operate the machine.

HANDLES THE COMPLETE CYCLE — Including cleaning, pickling, chromate treatments, plating, bright dip and drying.

COMPLETELY AUTOMATIC — No barrel lids to fasten and unfasten during automatic loading and unloading.

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NO HEALTH HAZARD — Occupational health hazards eliminated with ventilation of equipment.

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DEPENDABLE — Scores of machines in use. Machine design and construction constantly improved.

LOW INITIAL COSTS — For average operation lowest initial machine costs.

LOW MAINTENANCE COSTS — Proven over years of use and in varied operations.

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DETROIT 16, MICHIGAN

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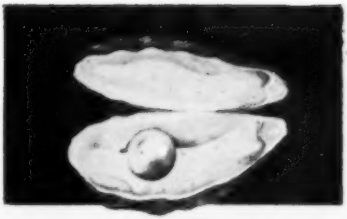

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It's easy! Simply by adding a small amount of Nacromer to your regular coating material*, you add a beautiful pearl-like lustre to your finish. The range of effects that can be achieved by also adding transparent pigments or dyes is amazing. For example, it is being used to get beautiful gun metal, gold and silver finishes. It transforms the character of standard colors to achieve unique effects. Nacromer will make a finish that will enhance the beauty of your product . . . increase its sales-appeal!

From a cost viewpoint, Nacromer is practical. You use your present method of application – brush, spray, or dip – without additional labor or equipment required. And, because only a small quantity of Nacromer is necessary, and, the cost of the Nacromer is so low, the added cost is negligible.

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*Nacromer is not suitable for use in pigmented enamels, high temperature bake-type synthetic resins containing formaldehyde, or paints. It is suitable for use over these coatings in a clear enamel or lacquer.

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All this in one quick trip through your washer
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Vol. 20, No. 12

SEPTEMBER, 1956

. . . . editorial . . . .

Do YOUR Men Need More Training?

One of the principal needs of our expanding industry is that for trained specialists. These men are not available in the numbers required.

The Cross Company, Detroit, faced with a shortage of engineers, established its own engineering school, organized to train machine designers for the company's expanding automation machinery and special machine tool building operations. Ralph E. Cross, executive vice president, states that this school is not a substitute for a college engineering course. The school stresses engineering fundamentals and teaches the engineer to apply his training and talents so as to be of greatest value to his company. Each student is urged to complete his formal engineering training by taking evening courses.

This example is not unusual. Two large companies are currently conducting evening schools in electroplating and finishing for their employees. Such a program, however, is not possible for smaller companies.

Complete, four-year college courses specifically in the fields of electroplating and paint finishing are not available, although the student may specialize in electrochemistry or organic chemistry.

The porcelain enameling industry is more fortunate in this respect. Full four-year college courses leading to the degree of Ceramic Engineer are available.

Individuals in the electroplating and paint finishing industries must pursue their own specialized training. To help fill this growing need, a number of evening courses in electroplating have been established, along with specialized courses in other finishing techniques. A summary of such courses is presented as a special feature of this issue of PRODUCTS FINISHING, beginning on page 36.

It is our hope that this list of courses, which are given at various times during the year, may serve to guide interested finishers in planning for their own future training. It can serve, also, as a useful reference to aid plant management in scheduling finishing technicians for further training and advancement.

Ezra A. Blount

—EDITOR

Finishing Automatic

Fig. 1—RCA Whirlpool Imperial Automatic Washer, produced by Whirlpool-Seeger Corp.

Ingenuity, quality consciousness and a safety-first policy make the Whirlpool automatic washer plant an outstanding example of a fully mechanized finishing installation.

By GERARD H. POLL, JR.
Associate Editor

Products feature finishing

ONE OF THE FASTEST GROWING appliance manufacturers in recent years is Whirlpool-Seeger Corporation. The company manufactures laundry appliances (Fig. 1), ranges, refrigerators, freezers, and air conditioners under the RCA Whirlpool trade name. It manufactures Kenmore laundry appliances, and Coldspot refrigerators and freezers for Sears, Roebuck & Company.

The company has seven manufacturing divisions in as many midwestern communities. The main office and an automatic washing machine plant are located at St. Joseph, Michigan, where facilities occupy 1,000,000 square feet and some 3,000 people are employed.

One of the large factory buildings in St. Joseph houses facilities for fabricating and painting automatic washers. On the first floor of this plant, 18-gauge steel is formed into cabinets for the washer. The cabinets

Washer Cabinets

. . . How Whirlpool-Seeger does it.

as well as the base plate, top, lid, cabinet sub-assembly and small component parts are loaded onto a conveyor here, which carries them through the cleaning, phosphatizing and priming steps necessary to provide the proper base for the finish coat. Two parallel overhead-chain-type Mechanical Handling Systems conveyor lines travel through this sequence. Finishing operations are carried out on the plant's second floor and roof (baking ovens).

Metal Surface Preparation

Metal preparation takes place in a 200-foot long totally-enclosed gas-heated spray washer. Steps in the process are as follows:

1. Clean. 160 deg. F. 1 minute. Alkali cleaner.

Fig. 2—Some conception of the size of Whirlpool's operation can be gained from this photo of a modern storage "bank," where painted cabinets are stored on conveyors located just below the plant roof, ready for movement to assembly areas as they are needed.

2. Water rinse. 150 deg. F. 30 seconds.
3. Water rinse. 135 deg. F. 30 seconds.
4. Phosphatize. 130 deg. F. 1 minute. Bonderite 1000.
5. Cold water rinse. 1 minute.
6. Chromic acid rinse. 100-110 deg. F. 1 minute. (0.54 oz./gallon)

Products used in making up the cleaning, phosphatizing and chromic acid rinse solutions are produced by the Parker Rust Proof Company.

The conveyor carries cleaned and phosphatized parts to a dry-off oven, where they are dried at 300 deg. F. for five minutes. To cool the parts before priming, the conveyor makes several passes through a cool-off room just outside the oven.

Flow Coat Priming

A 100 per cent epoxy-type primer made by Grand Rapids Varnish Corporation is applied in a Spra-Con flow coating unit (Fig. 3). Streams of paint are directed at the parts from nozzles aimed in several directions, so as to cover the parts completely. The second stage of this

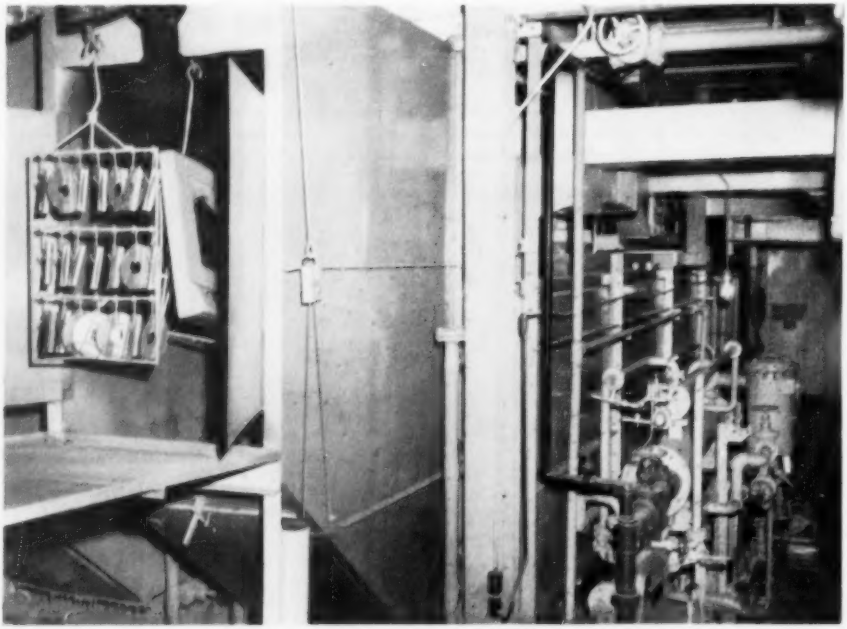

Fig. 3—Rack load of small parts (left) is about to enter flow coating unit, which applies prime coat. Cabinets enter a similar machine located immediately to the left of the unit shown. Filters, heat exchangers and paint circulating pumps are shown at right of photo.

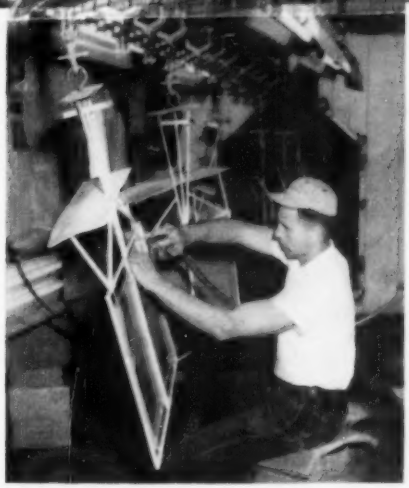

Fig. 4—Prime coat on all parts is smoothed where necessary with National air sander prior to application of gloss white finish.

process is a double pass through a chamber in which the concentration of vapors evaporating from the paint is carefully controlled to produce an atmosphere that will allow excess paint to drain from the parts at the optimum rate, giving a smooth, run-free prime coat.

Three factors must be carefully controlled if a prime coat of the proper thickness (0.2 mil minimum at top and 0.7 maximum at bottom) and quality is to be attained: paint formulation, solvent concentration in the vapor chamber, and conveyor speed. These variables are interrelated, and a change in any one of them must be compensated for.

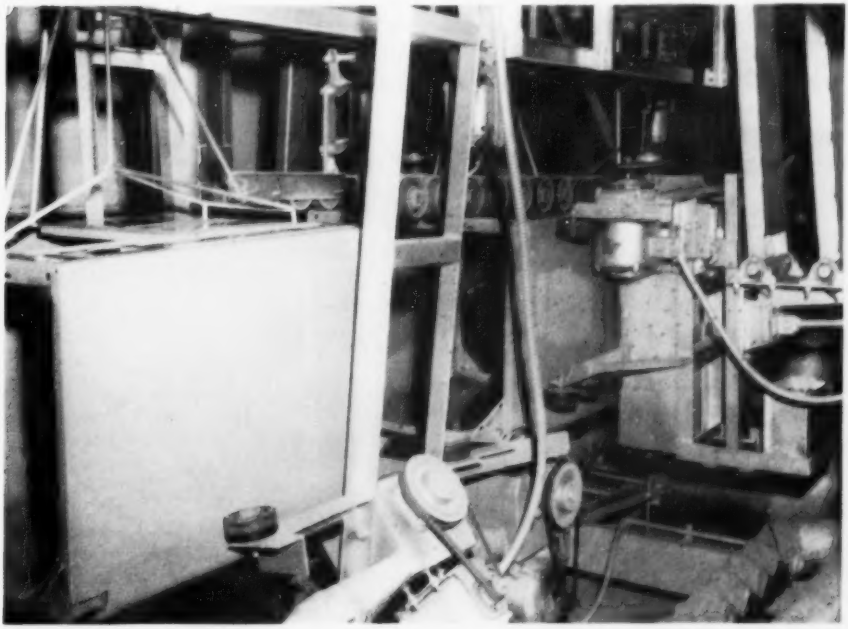

Fig. 5—Several motor-driven brushes are suspended so as to brush sanding residue from each cabinet after it has been prime-sanded. Vacuum lines (lower right corner) remove the dirt brushed off. Brushes are mounted to automatically compensate for several cabinet sizes.

". . . cabinets then go through a machine built by company engineers to remove dust particles."

Units leaving the flow coating unit travel to a prime bake oven located on the plant roof, where they are baked at 380 deg. F. for 20 minutes. Following the baking cycle, parts are transported to the finishing department floor, where the cabinets and other exterior parts are sanded with an air sander (Fig. 4) made by National Air Sander, Inc. Compressed air tubes mounted along the conveyor line remove loose dust from the parts; cabinets then go through a machine (Fig. 5) built by company engineers to remove the remaining residue of dust and abrasive particles. It consists of a series of revolving brushes installed on all sides of the passing cabinets, coupled with vacuum tubes to suck up the particles brushed off the parts. The brushes are suspended so that the cabinet pushes them apart as it goes through. Thus the device automatically adjusts for different sizes.

Tack cloths are used to remove dust and other particles from smaller parts that are not shaped so as to be suitable for the automatic brushing machine.

Electrostatic Spray Finishing

The finish coat is applied to primed parts in two Ransburg bell-type electrostatic systems (one for cabinets and larger parts and the other for smaller, flat parts). The white synthetic enamel used is a product

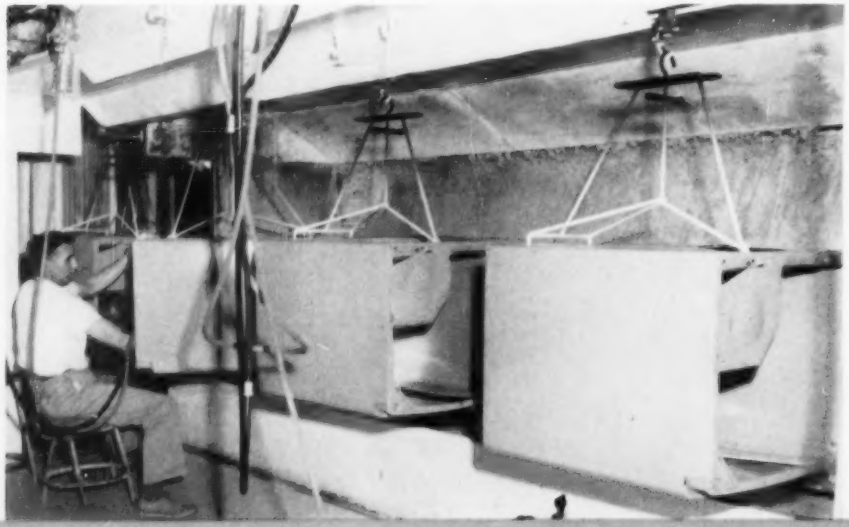

Fig. 6—All washer cabinets travel through this water-wash hand spray painting booth, where interior edges, corners, other shielded areas are reinforced prior to electrostatic painting.

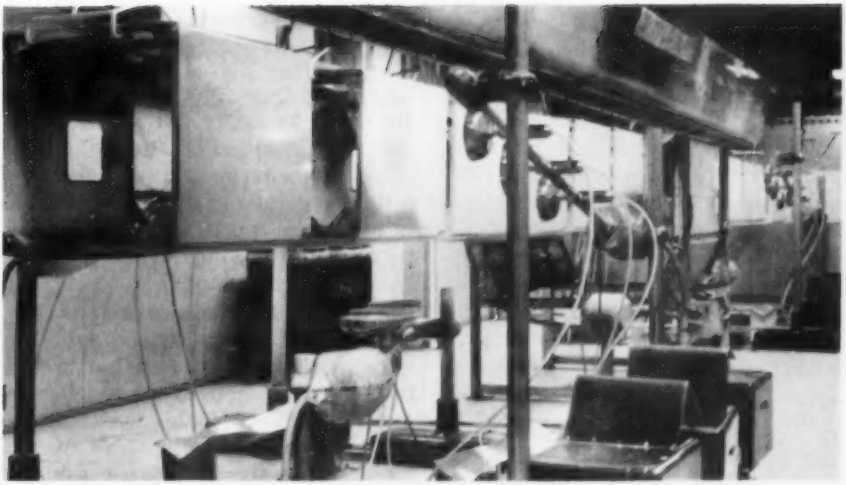

Fig. 7—Ransburg electrostatic system for finish painting automatic washer cabinets. Large shield around conveyor houses apparatus for pulling the cabinets closer together while in the electrostatic zone, so that no dummying is necessary and no paint is wasted on spaces between cabinets. Banks of infra-red lamps can be seen between two electrostatic setups. They can be used to "set" paint between coats when the weather is unfavorable.

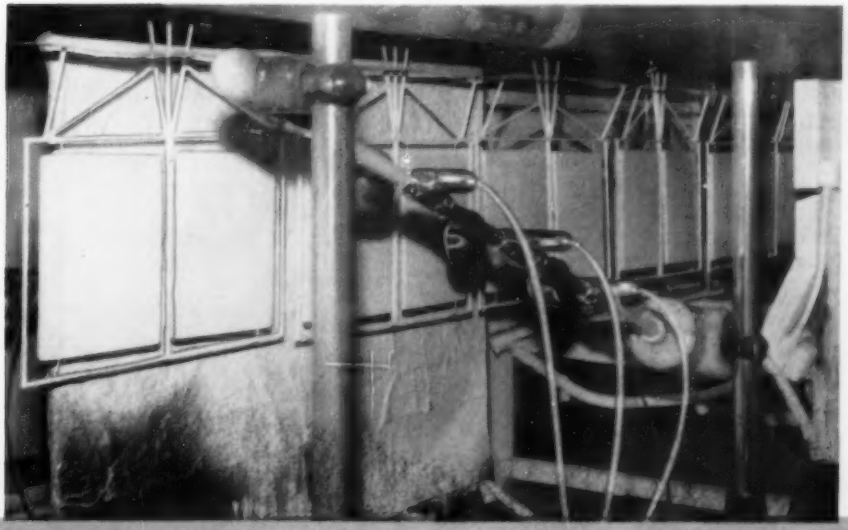

Fig. 8—A separate electrostatic system, similar to the one used to paint cabinets, is employed to paint smaller, flat washer parts, such as tops and lids. All parts are given two coats.

". . . a special device . . . brings the cabinets very close together, so that no paint is wasted."

of Rinshed-Mason Company. Prior to automatic spraying, all parts are reinforced by hand in a water wash spray booth (Fig. 6). This step assures that corners and depressions not reached by the electrostatic spray will be adequately covered. This operation also produces a thicker paint film on interior automatic washer areas where additional protection against corrosion is required.

Upon entering the electrostatic booth used for spraying cabinets (Fig. 7), a special device installed along the conveyor by Whirlpool engineers brings the cabinets very close together, so that no paint is wasted. Neither is any dummying necessary to occupy the space between the units on the conveyor. Two sets of three bell-type electrostatic units are used to apply the paint. The units are installed on each side and below the conveyor, so as to give excellent coverage to three sides of the cabinet (the fourth side is the open back of the washer, where appearance isn't important).

Paint particles atomized by the spinning bell have a charge of 90,000 volts, and thus are attracted to the parts on the conveyor, which are grounded. Very little overspray is produced because almost all of the particles are attracted to the grounded parts. The full coat of finish enamel is applied by the two sets of electrostatic units in two distinct finish coats. A bank of infra-red lamps alongside the conveyor be-

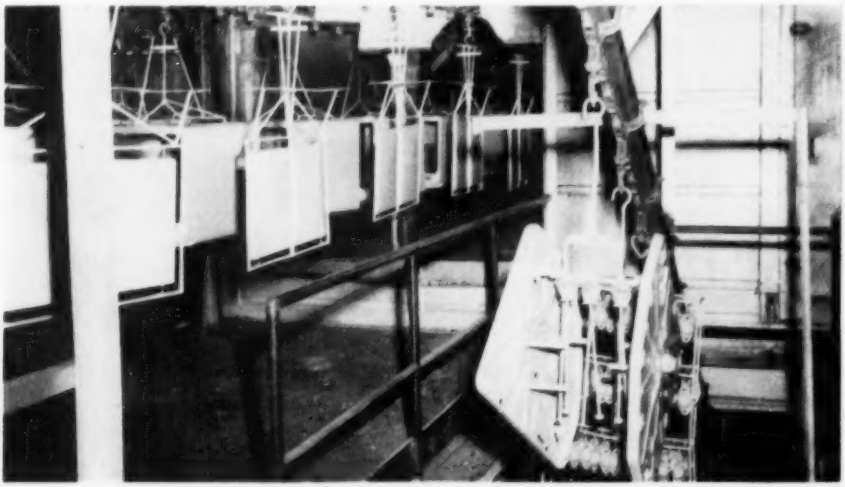

Fig. 9—Finish coated parts, on parallel conveyors, are shown leaving roof-mounted baking oven (left). After leaving oven, parts are allowed to cool while traveling around extra loops on the conveyors. They then descend (foreground) to lower level of the plant.

tween the two sets of electrostatic units can be used to "set" the first coat of paint prior to application of the second coat in poor drying weather.

A similar system is used to paint such parts as tops, lids and consoles (Fig. 8). It uses two sets of two bell-type electrostatic units (each unit has three bells) to apply two coats of paint. A device to bring parts closer together on the conveyor, similar to that used on the cabinet line, is used here also. The electrostatic units are placed on each side of the conveyor, at an angle, to cover the length of the parts. A bank of infrared lamps between the two sets of electrostatic units can be used when necessary to set the enamel after the first coat has been applied.

All makeup air used for supplying that lost in spray booth exhaust

Fig. 11—Charts shown behind the assembly line show hourly record of each shift's production quality and rejects. They help to keep products' quality high, reject rate down.

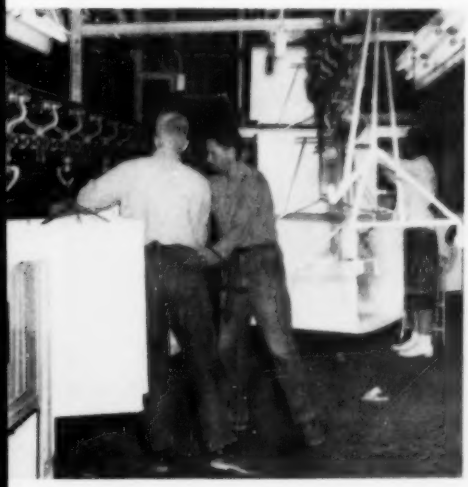

Fig. 10—After inspection, cabinets are transferred from finishing conveyor to assembly-storage conveyor. Quality is checked carefully.

Fig. 12—Washer is checked for finish quality and proper operation in this laboratory. One of every 10 workers is in quality control.

"Approximately one out of every ten workers is engaged in quality control . . ."

is filtered to prevent entrance of dirt that would mar freshly-painted products. Consistent with sound finishing practice, spray booths are kept under a slight positive air pressure.

Finish-coated parts travel immediately to a baking oven, where they are baked at 325 deg. F. for 20 minutes, and then cooled on the conveyor while moving to inspection and assembly operations (Fig. 9). All three ovens (dry-off, prime bake, and finish coat bake) are installed adjacent to one another, with a single wall between each of the sections, so as to conserve valuable heat.

Quality control is big business at Whirlpool-Seeger. Completed parts are inspected on the finishing conveyor (Fig. 10) and those parts passing inspection are then transferred to the assembly-storage bank conveyor (Fig. 10). Charts on the assembly line (Fig. 11) are changed hourly to show rejects, however small, and other statistics of how each shift is doing. Each shift then competes against the other shifts to produce a higher quality product. Approximately one out of every ten workers

Fig. 13—Side view of Kolene stripping unit. Windows allow hoist operator to observe progress of stripping and control rate of immersion in the molten bath so that reaction is not too rapid. Duct-mounted fan connected to hood (top, center) removes fumes from unit.

is engaged in quality control, including final inspection and actual service testing (Fig. 12).

Engineers in the plant are constantly searching for methods to improve products or to produce them at lower cost. Power-operated devices to do back-breaking or boring tasks are put into the system wherever possible. Motor-driven brushes on the conveyor at one point, for instance, help keep quality higher by removing dirt and paint particles that could fall from the conveyor onto freshly-painted parts.

Rack Stripping

Rack stripping is a serious consideration in a large installation such as this one. It is made more difficult by the use of an epoxy primer. This type of finish is notable for its resistance to chemicals, including those used in stripping paint.

Whirlpool-Seeger's answer to this problem is the Kolene stripping process, which uses a molten salt bath as the stripping medium. Equipment for using the process (Fig. 13) includes a tank with four compartments to hold a molten salt solution; a cold-water tank; a motor-driven agitator; a gas-fired heating apparatus; an overhead monorail conveyor; a motor-driven chain hoist to lift the racks; an exhaust system; and an enclosure over the tanks.

The cycle begins when a load of racks is raised from the floor on the hoist (Fig. 14). The operator then maneuvers it into the enclosed machine and over the treatment zone on a monorail conveyor (Fig. 15). The stripping tank contains a molten solution of Kolene No. 5 salt, a com-

Fig. 14—View of the loading end of Kolene stripping machine. Paint-laden racks on the right are ready to be stripped. Agitator motor can be seen to the left of work zone.

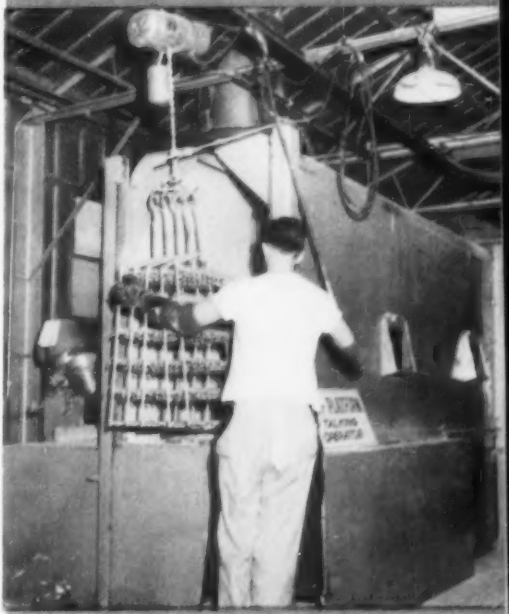

Fig. 15—Operator is shown moving a load of paint-laden racks into the Kolene stripping unit on an overhead monorail conveyor.

bination of caustic soda and an oxidizing agent, held at a temperature of 950 deg. F. The operator watches the work through a window as he lowers the paint-laden racks into the bath (Fig. 16). He lowers them gradually, so as to control the vigorous reaction that takes place as the stripping proceeds, and thus keeps the tank from foaming over. Three or four minutes are consumed in lowering the rack and allowing sufficient time for all paint to be stripped. In this time an average of 1½ pounds of paint per rack has been removed. The racks are then raised from the molten bath, quenched in cold water, and removed from the compartment, ready for use without any further treatment (Fig. 17).

The molten caustic stripping tank is divided into four compartments. The first is the burner compartment, where three gas immersion burner tubes heat the Kolene No. 5 salt into the molten liquid used to strip paint. The second compartment has a motor-driven agitator (left foreground Fig. 14) which constantly recirculates the material. The third compartment is the sludge zone, which is separated from the other zones by a weir. Baffles between this zone and the agitator zone direct the sludge to the bottom of this third compartment into a removable sludge pan. The fourth zone is the stripping zone, into which articles to

Fig. 16—Racks here are immersed about half way into molten salt bath. Stripping proceeds quickly, with a vigorous reaction. Operator watches reaction, controls lowering rate.

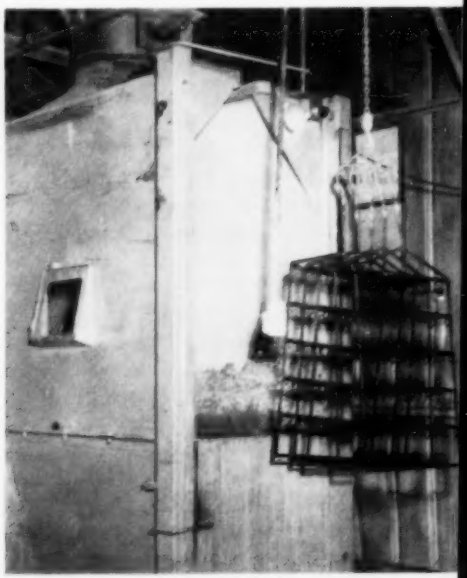

Fig. 17—Cleaned racks have just emerged from Kolene unit. (Figs. 1, 2, 7, 11, and 12 courtesy Whirlpool-Seeger Corp., St. Joseph, Mich. Other photos by PRODUCTS FINISHING.)

For more data on advertisement on opposite page circle 155 on Reader Service Card

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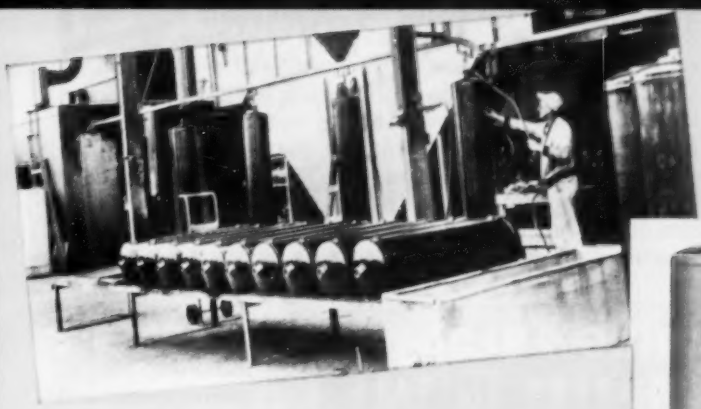

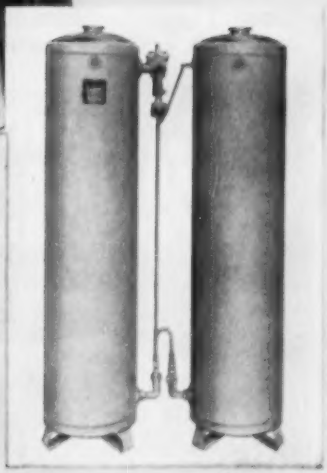

Plastic coating guards water softener tanks against corrosion

HERE'S HOW...

The Roper Manufacturing Corporation of El Monte, California, needed a tough, dependable anti-corrosion lining for tanks used in water treatment. They decided to test a promising coating formulated from Epon 1007 and supplied by the Trail Chemical Company of El Monte.

This Epon resin-based coating, applied to steel panels, easily survived severe tests for metal adhesion and thermal shock. Immersion tests showed that it resisted organic chlorides, detergents, salt spray and acids at both room and elevated temperatures.

Finally, two test panels were taken from an autoclave in which they had been held for two years. The first panel—coated with a high-quality porcelain—showed large rust spots, while the Epon resin-based coating on the other panel *was still intact*. Small wonder that Roper has now standardized on Epon resin-based coatings to line their water softener tanks. More than 30,000 tanks have been delivered, with no complaints to date.

If you have a product finishing problem, consider solving it with Epon resin-based coatings. They have excellent adhesion, resistance to abrasion and impact, plus the ability to withstand heat, humidity and the attack of corrosives. You can call on our sales offices for the names of Epon resin-based coating formulators. Write for your copy of "Planning to Paint a Pyramid?"

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be stripped are immersed (Fig. 16).

The sludge pan, containing a mixture of stripped paint and some of the salt residue, is removed whenever necessary, depending upon the amount of paint that has been stripped. The pan is pulled out of the molten salt, and its contents discarded.

Additional stripping salt is added to the unit by punching holes into a non-returnable container in which the salt arrives, and lowering it into the molten bath on the chain hoist. The contents melt and flow through the holes in the container into the molten bath. This is consistent with Whirlpool-Seeger's strict safety policies, since there is no danger to personnel from contact with the molten salt. An exhaust fan, mounted above and behind the unit, removes smoke and vapors from the stripping chamber through ducts.

Some washer parts that have been rejected in final inspection are also stripped in this unit. Only parts that can be stripped without warping are processed by this method, however.

The entire unit is 12 feet long and 10½ feet wide. The stripping tank itself is 4 by 4 by 3 feet deep.

Automatic safety controls on the unit are provided to ensure safe operation.

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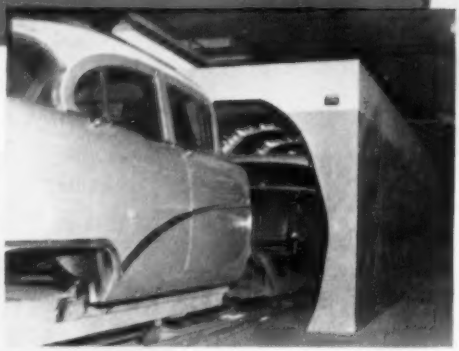

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Another major auto manufacturer reports that CLEPCO Paint Ovens are lower in original cost as well as in operating costs than the conventional gas fired convection ovens previously in use.

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The new Bendix Unitized Ultrasonic Cleaner

NOTHING CLEANS SO CLEAN AS SELECTED BY RANSOHOFF FOR USE IN ITS

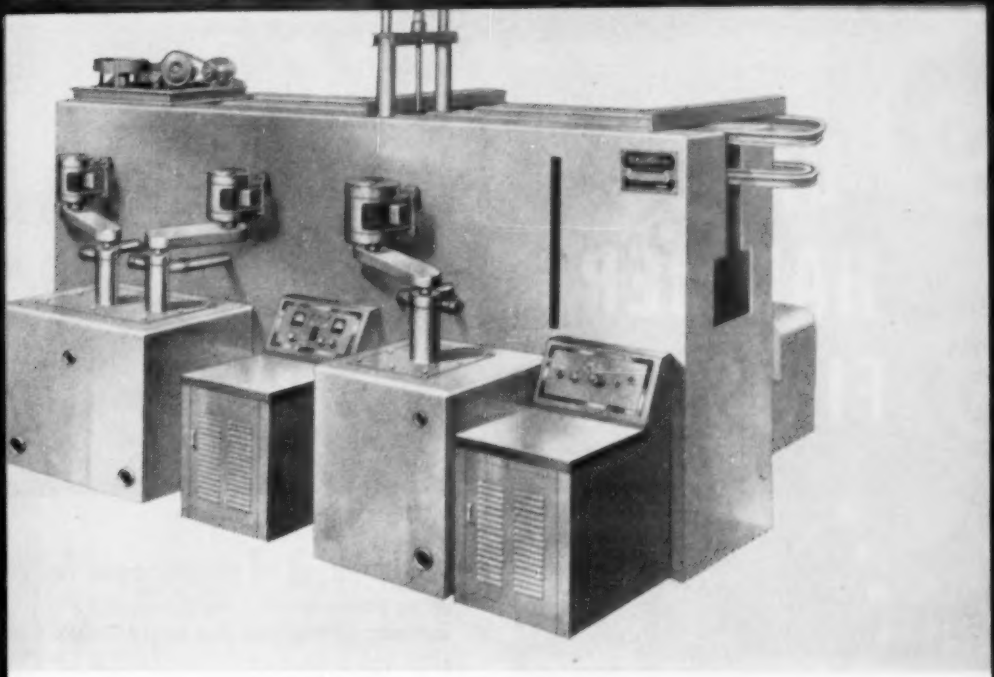
The experience of several hundred users has demonstrated conclusively that Bendix Ultrasonic cleaning is far faster, far cheaper, and three to seven times more effective than any other method of cleaning parts and assemblies.

Grease, lapping compounds, cutting oils, abrasives, and other contaminants that can be troublesome to parts and assembly performance are *removed 99.5% to 100% . . .* in *seconds*.

Of prime interest today, users' reports show that Bendix Ultrasonics reduces cleaning costs drastically. Direct labor savings amount to as much as 75%. Rejects, due to the presence of contamination, become practically non-existent. Savings from using water-detergent solutions, instead of expensive solvents, frequently run 90% . . . and more.

How are all these benefits possible? Because for the first time a revolutionary . . . and better . . . cleaning principle has been successfully applied to today's volume cleaning jobs. Bendix high frequency sound waves "break loose" contamination from metal parts and assemblies as no other method can. These Bendix "scrubbing fingers" easily reach into tiny crevices, blind holes and other areas too complicated for other cleaning methods to touch.

And now Ransohoff, Inc., a foremost builder of cleaning machinery, offers industry *a fully automated ultrasonic cleaning system* that applies the Bendix Ultrasonic Cleaner in a Ransohoff production line conveyor.



The new Ransohoff Conveyorized Cleaning System

THE BENDIX ULTRASONIC CLEANER— NEW CONVEYORIZED CLEANING SYSTEM

See both new units for the first time at the Metals Show! PIONEER-CENTRAL DIVISION, BENDIX AVIATION CORPORATION, DAVENPORT, IOWA.

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See CONVEYORIZED ULTRASONICS IN ACTION
at the
NATIONAL METAL EXPOSITION
Cleveland, Oct. 8—12
Ransohoff: Booth 2734 Bendix: Booth 2123

Pioneer-Central Division

Bendix
AVIATION CORPORATION

For more data circle 158 on Reader Service Card

DAYCO HAMMER FINISHES

For uniformity of pattern, depth of gloss, permanency, toughness, chip resistance; all features that help to make sales and build a quality reputation for your products, specify DAYCO baking or air dry Hammer finish.

Backed by half a century of "know how", Dayco finishes have a quality reputation you can depend upon. We have, or will produce for you, the special finishes your production calls for.

- Clear and colored Lacquers
- Primers
- Surfacers
- Baking Enamels
- Handle Finishes
- Removers
- Screening Materials (Lacquers—Vinyls —Synthetics)
- Undercoats

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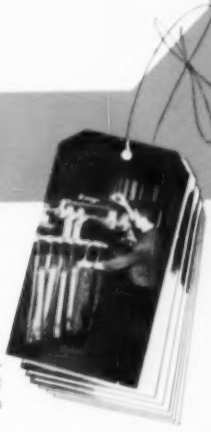
From H-VW-M

10 important ways to keep metal finishing costs down



All the processes, supplies and equipment in H-VW-M's line have been designed for maximum efficiency and cost savings. But among this full line are a group of products and processes which—if they apply to your operations—can offer outstanding costs and labor saving advantages. Included in this group are high-efficiency electrical and processing equipment, unusual processes, and finishing supplies having unique advantages.

The scope of the exceptional H-VW-M products, described on the following pages, covers a wide range of plating and finishing operations of every type, and the likelihood is strong that several, or perhaps all, are applicable to your plating plant. By investigating all of them, you should strike just the process, equipment or supplies you need to effect very real economies in your operations.

HANSON-VAN WINKLE-MUNNING COMPANY

MATAWAN, NEW JERSEY

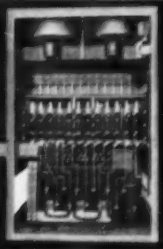
Manufacturers of a complete line of electroplating and polishing processes, equipment and supplies

Plants: Matawan, New Jersey • Grand Rapids, Michigan

Sales Offices: Anderson (Ind.) • Baltimore • Beloit (Wisc.) • Boston • Bridgeport • Chicago Cleveland • Dayton • Detroit • Grand Rapids • Los Angeles • Louisville • Matawan Milwaukee • New York • Philadelphia • Pittsburgh • Plainfield (N. J.) • Rochester • St. Louis San Francisco • Springfield (Mass.) • Utica • Wallingford (Conn.)

10 important ways to keep

ELECTRICAL AND PROCESSING EQUIPMENT



New Germanium Rectifier with panel removed to show simplified construction.

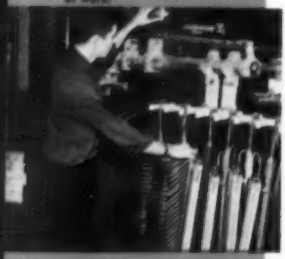
Manual Tap Switch Control

Motor Operated Tap Switch Control

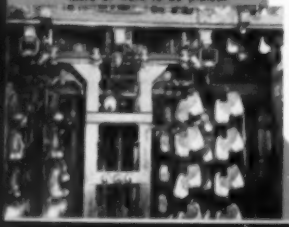
Continuously Variable Auto-Transformer

Saturable Core Reactor

Operator is shown adjusting the Dial-A-Cycle mechanism that will determine the cycle for this rack of work.



Automatic loader-unloader has just removed two racks of plated bumper guards and loaded two more of work to be plated.



GERMANIUM RECTIFIERS

Although only recently added to the H-VW-M family of electrical equipment, H-VW-M Germanium Rectifiers are already widely used in plating, anodizing and related processing, where they are known for their efficiency, economy of operation, compactness, and close voltage control. Available in 6 to 80 volt capacity models with current outputs of from 500 to 10,000 amperes (or, in combination, unlimited output), these dependable, easy-to-maintain rectifiers available in either self-contained or remote controlled models, are designed for 24-hour-a-day operation at full capacity.

At full load, with voltage outputs of 12 volts and above, H-VW-M Germanium Rectifiers have efficiencies in excess of 90%. At ¼ and ½ loads, efficiencies are exceptional. Voltage regulation of as low as 5% can be obtained from no load to full load at voltage ratings of 20 volts and above.

Features include an integral cooling unit and overload and line short circuit safeguards. New low prices on many H-VW-M Germanium models mean you can enjoy the benefits of this type, in some cases, for the same price you would pay for a comparable Selenium Rectifier.

RECTIFIER CONTROLS

H-VW-M offers a complete line of rectifier controls to provide for many control functions. Used with either selenium or germanium rectifiers, these controls, properly applied, permit the most efficient control possible. Such devices as manual and motor operated tap switch controls, continuously variable auto-transformers and saturable core reactors are used with or without supplemental controls to provide automatic voltage stabilization, automatic current stabilization as well as automatic programming. H-VW-M Bulletins ER-108 and ER-109 further explain economical H-VW-M Rectifiers and Controls. Write for it.

FULL AUTOMATIC CONVEYORS

For well over 30 years H-VW-M design engineers have worked continuously for improvements in the automatic conveyors for electroplating and allied operations in which H-VW-M pioneered.

Today's full-automatic conveyors are a far cry from the conveyors produced by H-VW-M as early as 1922. But one thing remains the same – and that is H-VW-M's desire to provide the most advanced and efficient equipment possible. Scores of innovations and improvements resulting from continuing H-VW-M research mean today's H-VW-M Full Automatic Conveyors offer the ultimate in service and efficiency for peak production of the highest quality at lowest cost.

DIAL-A-CYCLE CONTROL

Exemplifying the many H-VW-M developments contributing better, easier plating, is the remarkable new DIAL-A-CYCLE Control. This unique selective by-pass mechanism – of particular interest to aluminum anodizers – permits a whole series of different operations and cycles in one full automatic conveyor. Length of any treatment time can be varied, and, in anodizing, different colors can be anodized in one continuous operation, and in any sequence. It is a truly revolutionary device, resulting in remarkable labor savings and increased production.

AUTOMATIC LOAD-UNLOAD

Automatic Load and Unload is another recent development of H-VW-M that contributes to greater economies in the plating room. This new transfer unit, operating the same indexing sequence between plating conveyor and a monorail conveyor loads and unloads racks automatically. Manual handling is eliminated by this major advance towards automation in metal finishing.

This, of course, is just one of many types of conveying equipment offered to metal finishers. Return type conveyors, elevator conveyors, high-lift conveyors, straight line conveyors, and others – of every description are H-VW-M designed, manufactured and installed. If you'd like to know more about the cost-saving story of H-VW-M Full Automatic Conveyors, write for Bulletin FA-105.

metal finishing costs down

BUFFING AND CLEANING SUPPLIES

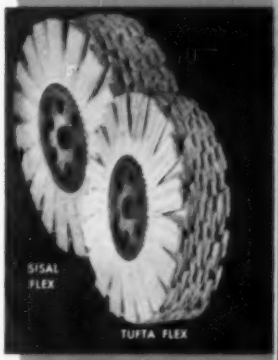
BUFFS

Tufta-Flex and Sisal-Flex Buffs

Speed and economy are embodied in two new H-VW-M Buffs for thorough cutting and coloring on contoured surfaces. For medium and heavy duty, SISAL-FLEX Buffs with sisal-cored tufts are available, and for light to medium duty, TUFTA-FLEX Buffs, having full cloth tufts, are offered.

Both buffs feature double-folded tufts for maximum cutting surface, and to retain compound on the leading edges and ends of the tufts. To prevent streaking, tufts are staggered in a double row around the buff. Cool running, a feature of both buffs, is the result of staggered tufts, plus a pattern of ventilating holes in the rugged steel center. Fraying, which is wasteful and expensive, is ruled out by the bias-cut construction of both cloth and sisal.

These time and cost-saving new buffs are available in standard diameters from 12 to 18 inches.



Plain Ruff-L-Buff (below) after wearing off 1 inch in test. Loose threads, numerous holes and breaks due to excessive heat and abrasion are apparent.

Binderized Ruff-L-Buff (below) after same test. Hollow absence of thread or cloth breakage, convincing proof of Binderizing's effect on buff life.

BINDERIZED® RUFF-L-BUFFS

"BINDERIZED" Ruff-L-Buffs are pre-treated with a high quality compound binder. Because every fibre is impregnated with the same binder used in buffing compounds, Binderized Ruff-L-Buffs are ready for operation at top efficiency from the very first piece.

The cost-saving advantages of Binderized Ruff-L-Buffs are many. "Heading-up" is eliminated, thus break-in time is radically reduced. Because of the natural affinity between the Binderized Ruff-L-Buffs and the compound, the compound lasts far longer, and is easier to apply. Naturally, much better cut is obtained because of the high amount of compound carried.

Perhaps the greatest advantage of Binderized Ruff-L-Buffs is their internal lubrication which prevents wear inside the buff (see photos). Wear is even – and up to 30% longer. To learn more about the unusual economies of Binderized Ruff-L-Buffs, write for Bulletin No. B-103.

LIQUIMATIC COMPOUNDS

and application equipment

Buffs "live" up to 200% longer . . . No compound waste . . . Reduced labor costs . . . Fast cutting, easy cleaning – all these advantages and more are embodied in the unusual Liquimatic Liquid Compounds and application equipment.

Because of the enormous economies of using the Liquimatic System, the system soon pays for itself in buff, compound and labor savings.

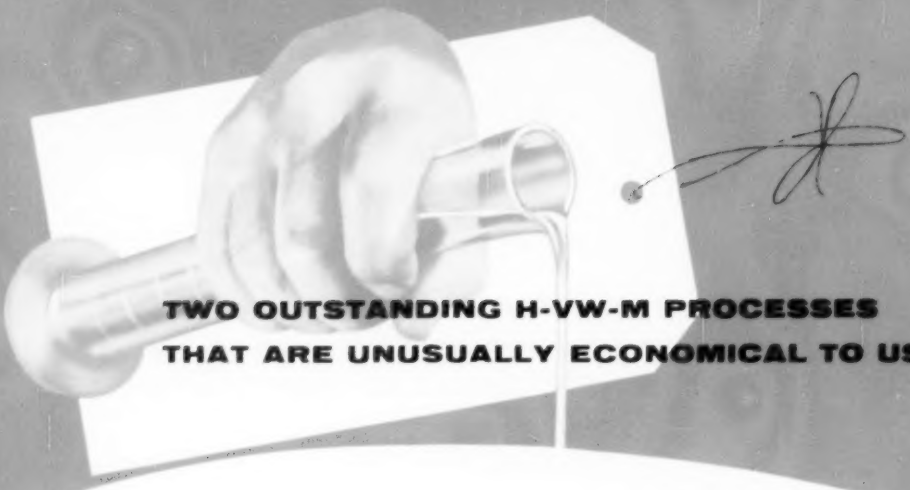
A complete line of Liquimatic Compounds is available for cutting and coloring ferrous and non-ferrous metals. These provide an adhesive, slow-wearing buff face, and have a high safety factor because of their high flash point. All are of sprayable viscosity, and have a long storage life. Write for H-VW-M Bulletin No. Co-103, which fully describes Liquimatic and other economical H-VW-M Compounds.

85-S ALUMINUM CLEANER

H-VW-M devotes constant research to the subject of cleaners and the result is a comprehensive line of Matawan Cleaners giving superior results in soak cleaning, power spray operations, oxide removal, and special cleaning and etching operations.

Of particular importance is H-VW-M's new 85-S Aluminum Cleaner, which offers interesting advantages to aluminum finishers. It prevents scale formation, for instance, thus keeping coil and tank walls scale free, and it leaves an extremely bright surface. Its built-in regenerator makes maximum effective use of caustic in the bath.

H-VW-M Bulletin C-108 tells about this unusual cleaner, and other Matawan Cleaners offering unusual money-saving advantages.



TWO OUTSTANDING H-VW-M PROCESSES THAT ARE UNUSUALLY ECONOMICAL TO USE

LEVELUME

H-VW-M's new LEVELUME represents a milestone in nickel plating processes. It is the first bright nickel process to combine qualities of full brightness, high leveling and exceptional speed. In high-production installations, deposition rates with LEVELUME are 100% higher than those obtained with any other process, but will require some air agitation equipment.

Conversion to Levelume is simple, involving no new investment in conveyors, or tanks.

Key to the new process are its addition agents. With them an activated carbon pack can be used in the plating solution filter. This constantly removes harmful organic contaminents, preserving the purity of the bath, and consequently contributing to the economy of the process.

A few of the additional benefits include high surface activity, good ductility, controlled stress, and the feasibility of double coatings. A full description of the process—one in the family of NICKELUME processes—is available in the Levelume Manual, which is available on request.

CADALUME

Bright, uniform attractive cadmium deposits are obtained with Cadalume – a new, clear, low-cost bath which makes bright dips unnecessary. With the process, ferrous parts are protected against corrosion and non-ferrous parts against surface tarnish, corrosion or galvanic couples formed in assemblies.

Like bath cost, the rate of consumption with Cadalume is low, since a single liquid brightener is used in a standard cadmium solution. Other advantages include increased plating speeds, improved deposit distribution and throwing power, and heavy deposits, where required, without surface defects or loss of brilliance.

Conversion to Cadalume is simple and low cost. Method of conversion plus more facts about this superior new cadmium process, are contained in the H-VW-M Cadalume Technical Manual, which is available without cost.

H-VW-M PROCESSES, SUPPLIES AND EQUIPMENT KEEP PLATING ROOM COSTS DOWN . . .

They're Always Your Best Buy!

SINCE 1920

HANSON-VAN WINKLE-MUNNING COMPANY

MATAWAN, NEW JERSEY

Manufacturers of a complete line of electroplating and polishing processes, equipment and supplies

Plants: Matawan, New Jersey • Grand Rapids, Michigan

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literally "LIQUID ENVELOPE"

the original, firesafe, strippable
SPRAY-BOOTH COATING

peels off spray-booths that easily!

A gag? No, a fact! It's easy to *peel* booths *clean* with "Liquid Envelope." Spray on. When overspray accumulates, peel off and re-coat. Takes only minutes. Saves labor. Promotes firesafety. "Liquid Envelope" film will not burn or support combustion. Improves illumination, too. In use from coast-to-coast for over 10 years. Try it. Order a 5-gallon test sample at drum-lot price from your nearest distributor.

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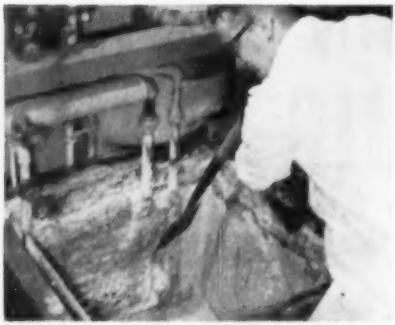
Introducing a new aluminum ...reduces maintenance costs...

...MIL-



Ordinary caustic solution causes build-up of scale on tank interior. Scale must be chipped off frequently.

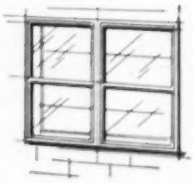
New Wyandotte Mil-Etch suspends dissolved aluminum in solution. No scale develops throughout entire life cycle.

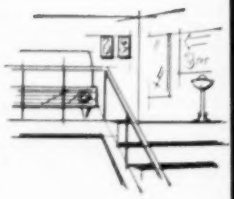
Here's a brand-new caustic-type alumi num etchant that eliminates expen sive shutdowns, needless maintenanc and labor costs. Mil-Etch keeps dis solved aluminum in solution—prevent it from forming a hard scale that must be chipped from tank walls.

Etches rapidly and uniformly. Economically concentrated, Wyandotte Mil-Etch produces an attractive, uni form, high-quality etch in only a few minutes on aluminum extrusions, wrought sheets and bar stock. You can also use Mil-Etch for deep etching or chemical milling of aluminum alloys.

Easy to use. Mil-Etch is nondusty,

Use Mil-Etch for





etchant that eliminates scale produces a bright matte surface

ETCH !

will not cake in drums; it develops a low-level foam blanket to prevent excessive fuming. You can use a tank of Mil-Etch until it becomes "loaded" with dissolved aluminum.

Desmutting. For brightening aluminum alloys that turn dark in alkaline etching processes, try Wyandotte 2487. It is safer than ordinary acid solutions, and permits a closer control of the desmutting bath. Being in easy-to-handle granular form, solution make-up and additions are simple.

For full information on how new Mil-Etch and Wyandotte 2487 will solve your aluminum-etching problems, call your Wyandotte representative.

Wyandotte Chemicals Corporation, Wyandotte, Mich. Also Los Nietos, California. Offices in principal cities.

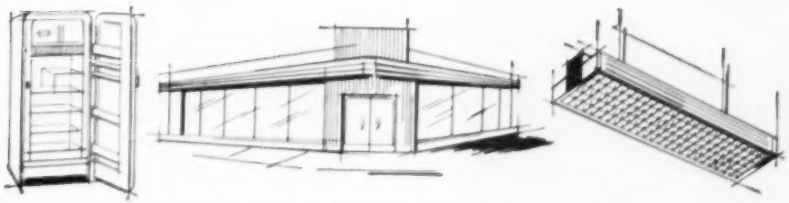
THE BEST IN CHEMICAL PRODUCTS FOR METAL FINISHING

Wyandotte

CHEMICALS

J. B. FORD DIVISION

etching all aluminum surfaces



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Training Courses in

Electroplating • Paint Technology • Spray Painting

Electroplating Courses

Brooklyn, N. Y. Brooklyn Evening Technical High School, 29 Fort Greene Place. Instructor: Louis Serota, 4495 Kings Highway, Brooklyn, N. Y.

Classroom discussion and laboratory exercises divide the time for the course. A general review of the elements of chemistry relating to plating operations and simple calculations required to understand solution preparations are covered in the class studies. The fundamentals of series and parallel electrical circuits are also reviewed.

Such topics as pH, wetting agents, brighteners, buffer action, pitting agents and deionizing are introduced in the study of plating solutions.

Laboratory exercises provide for individual experiments in methods of analysis of copper, nickel and cyanide baths. Additional laboratory work includes Hull Cell studies, pH meter, anodizing, immersion plating, and thickness measurements.

Graduating students are presented with a letter of recommendation.

Chicago, Ill. Illinois Institute of Technology. Instructor: J. M. Andrus, 3701 N. Ravenswood Ave., Chicago, Illinois.

★ ★ ★

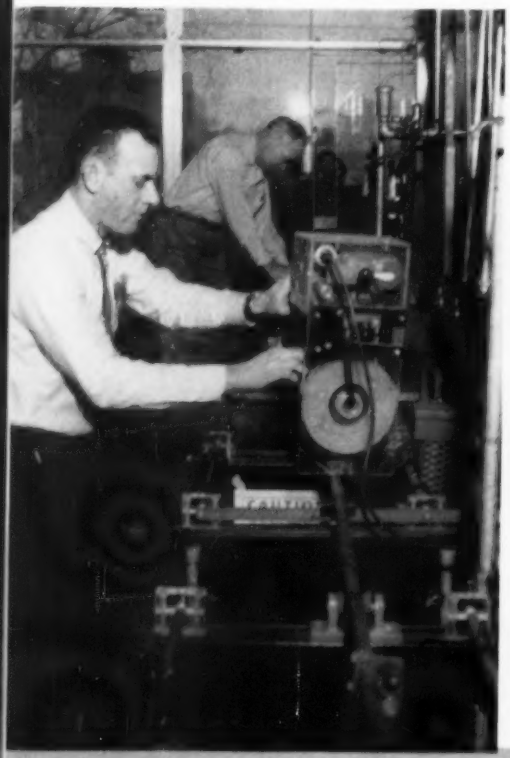


Fig. 1—Dr. Fred Kisslinger, associate professor of metallurgical engineering, and Olaf Paasche, a graduate student, are shown setting up equipment at the Illinois Institute of Technology, Chicago, Ill. The new laboratory is one of the first electroplating laboratories to be set up strictly for educational purposes. (Photo courtesy Illinois Institute of Technology.)

Finishing

Recognizing the importance of continued education and training in finishing techniques and technology to the future growth of the Finishing Industry, PRODUCTS FINISHING lists here some of the courses of study being offered in various educational institutions and industry centers. Many of them are evening courses designed for the convenience of individuals employed in the industry.

Summary of Available Courses in Electroplating

City	School	Instructor	Tuition Fee Per Semester	Course Length
Brooklyn	Brooklyn Evening Technical High School	Louis Serota	None	18 weeks
Chicago	Illinois Institute of Technology	J. M. Andrus	$45.00	18 weeks
Cleveland	John Hay High School	T. Pavlish	$2.50	12 weeks
Detroit	Various Plants and Laboratories	Fred G. Brune	——	——
Hartford	State Trade School	Harry Sanders	——	——
Indianapolis	Purdue University Extension	Dr. A. M. Max	$45.00	16 weeks
Los Angeles	University of California Extension Division	M. Raskin	$27.00	18 weeks
New Haven	New Haven College	E. F. Foley	$42.00	15 weeks
Newark	Various Plants and Laboratories	Dr. Dodd Carr, Chairman	$20.00	11 weeks
Philadelphia	Temple University	Dr. S. Heiman	$35.00	15 weeks
Providence	Central Senior High School	J. A. Smith, Jr.	None	36 weeks
Rochester	Rochester Institute of Technology	W. F. Swanton	$28.00	15 weeks
St. Louis	Hadley Technical High School	Dr. Otto C. Klein	$9.00	15 weeks
San Antonio	Trinity University	W. P. Wisdom	$10.00	14 weeks
Stroudsburg	Kushner Electroplating School	Joseph B. Kushner	$125.00	4 mos. to 1 year
Toronto	Central Technical High School	A. R. Moores	$15 non-res. $5 city res.	6 mos.

This is a one-year course in electroplating, and is being conducted in the Department of Metallurgical Engineering of Illinois Institute of Technology.

The class is held one night per week, two one-hour periods, for two semesters. Subjects covered include: fundamentals of chemistry applied to plating; fundamentals of electricity applied to plating; plating baths and their characteristics. Deposition of the following metals is considered: nickel, acid copper, cyanide copper, chromium, cadmium, and zinc. Anodizing and electropolishing are also taught in the course.

The first semester consists of lectures and demonstrations, including work in a regular chemistry laboratory. The second semester consists of lectures and plating experiments.

Mr. J. M. Andrus, class instructor, is chief chemist of Croname, Inc., Chicago.

Cleveland, Ohio. John Hay High School, East 107th St. and Carnegie Ave. The instructor is T. Pavlish.

A practical course of study in plating and metal finishing is being offered under the co-sponsorship of Plating Trades Association of Ohio, Cleveland Branch of the National Association of Metal Finishers, and the Cleveland Board of Education, Adult Education Division.

The purpose of this course is to train individuals employed directly in plating operations in plants, so that they may have a better understanding of the practical and technical problems of plating.

The course is composed of a series of lectures and laboratory experiments covering fundamentals of chemistry, electricity, metal surface preparation, laboratory control and tests, and testing equipment.

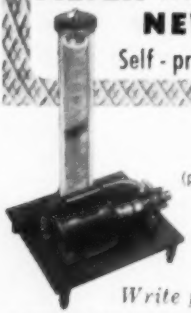
Each student, upon satisfactory completion of the course, receives an appropriate certificate.

Detroit, Michigan. Instructor: Fred G. Brune, Chrysler Jet Engine Plant, P.O. Box 1116, Detroit 31, Michigan.

The course will include a number of discussions and demonstrations as well as plant tours. Sessions of the course will be held at various plants and laboratories in the Detroit area.

The basis for the course of study is to review the scientific principles

FILTER with a Sethco NEW, exclusive Self-priming PUMP



Model LSIN-20
300 gal./hr.
(portable: 14"x16"x24" high)
filters solutions
from ph 0 to ph 14

25 other models
to fit your needs

Write for Folder

- **FILTER ASSEMBLY:** High temp. lucite. Two #10 cotton or dynel filter tubes on ss core.
- **PUMP:** Stainless steel 316, self-priming.
- **MOTOR:** ¼ H.P., totally enclosed, ball bearing. Capacitor, 110 V, 60 Cy., 1 ph.
- **PANEL:** Linen impreg. phenolic laminate, 14" x 16" x ½" thick; rubber tire, ball bearing casters.

HOSE: 20 ft. reinforced 2 ply chemical hose.

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of electrochemistry as they are related to plating practice. Technical discussions of the course will be planned and presented in simple terms so that the information presented can be readily understood.

Sessions will be scheduled on the following subjects: The Relation of Electrochemistry to Electroplating Practice; Relationship of the Atom Ion and Electron to Plating; Ions in Electroplating Solutions; The Action of Anode and Cathode in Plating; Metal and Solution Potentials; Action of Direct Current in Plating Solutions.

This course was presented in a series of three meetings during the Spring of 1956 as an introductory course to determine primarily the subject matter for the more extensive course to be given this Fall. Subjects covered during the Spring session included:

"Metal Cleaning," by Ed Kubis, Wyandotte Chemicals Corporation Research Laboratory; Dr. R. B. Saltonstall discussed "Introduction to Theory of Plating Process," and William Clemens discussed "Engineering for Plating Processes," at the Udylite Research Corporation.

A plant tour, followed by informal discussions, was held at the Michigan Chrome & Chemical Company. David Hardesty of the G. M. Research Laboratory coordinated the program.

Hartford, Conn. State Trade School. Instructor: Harry Sanders, 32 Olive St., Newington, Conn.

Indianapolis, Indiana. Purdue University Extension, 902 N. Meridian St. Instructor: Dr. A. M. Max, 5640 Guilford Ave., Indianapolis.

Los Angeles, Calif. University of California Extension Division. Instructor: Mitchell Raskin, 3034 Greenfield Ave., Los Angeles, Calif.

A night school course in the science and practice of electroplating one evening a week for 18 consecutive weeks, at 708 Hillstreet Bldg., Los Angeles.

The present course is Part I of a

Fig. 2—Hull Cell is used for experiments in electroplating laboratory at Brooklyn Evening High School, Brooklyn, New York. (Photograph courtesy "Plating," Newark, New Jersey.)

two-semester survey in the techniques and practices involved in electroplating. The instruction is designed for persons already involved in electroplating who wish to acquire a broader knowledge of the craft. All phases, including plating, cleaning, polishing, chemistry and the preparation of solutions are treated.

Mr. Raskin, the instructor, is factory manager of the Ajax Hardware Mfg. Co., Los Angeles, and has taught the plating class for a number of years.

New Haven, Conn. New Haven College, 51 Prospect St., New Haven. Instructor: Edward F. Foley, 442 Elm St., New Haven, Conn.

The two-year course in electroplating given at New Haven College is set up as a four-term course (15 sessions per term), with the following general term topics: 1) Electroplating Fundamentals; 2) Chemistry for Electroplating; 3) Electroplating Solutions; 4) Electroplating Practice.

This course is designed to supplement practical plant experience with theory. Classes are held one evening per week for two hours. Lectures are supplemented by laboratory work.

A certificate is given upon completion of the course.

In considering plating solutions, the instructor prepares lectures and simple demonstrations, including the use of slides and films as they are available. Formulas for plating solutions are given, together with an explanation of the simple chemistry of the solutions, sources of impurities, actual bath makeup and cost per hundred gallons.

The 15-meeting course on Electroplating Fundamentals is designed to cover much of the material presented on that subject in "Principles of Electroplating and Electroforming," by Blum and Hogaboom. The 15-meeting Course in Electroplating Practice covers problems of plating room management and maintenance, including consideration of design and installation problems in a plating plant, bath maintenance, determination of the plating cycle, calculation of the size of equipment required, and determination of the processes to be used.

Newark, N. J. Newark Branch, A. E. S. Chairman, Dr. D. S. Carr, Bart-Messing Corp., 229 Main St., Belleville 9, N. J.

This electroplating course includes training in racking, cleaning, pickling, barrel finishing, polishing, plating, purification, filtration and analysis. Lectures are given at various plants and laboratories in the Metropolitan New York area, thus combining plant tours with instruction in the various phases of electroplating. The instructors, who lecture

For more data circle **163** on Reader Service Card

in their fields of specialization, are for the most part, members of the Newark or New York Branches of the A. E. S.

Diplomas are awarded to those students who complete the course.

The Spring 1956 session of the course included meetings at the plants and laboratories listed. Hy-Grade Plating Co., Newark, N. J. Dr. D. S. Carr spoke on "Introduction to Electroplating," and E. Wagner spoke on "Racking of Plating Work." Oakite Products, Inc., New York, N. Y. G. A. Lux discussed "Metal Cleaning and Pickling." Metal Finish, Inc., Newark, N. J. P. E. Kirchartz spoke on "Barrel Finishing."

Oakite Products, Inc. G. A. Lux discussed "Electrocleaning and Phosphate Coatings." Behr-Manning Co., Inc., Teterboro, N. J. E. E. Oathout spoke on "Belt Polishing." Royal Plating and Polishing Co., Newark, N. J. L. J. Donroe covered "Copper and Dull Nickel Plating."

Pyrene Metal Finishers, Inc., Newark. N. J. L. J. Donroe spoke on "Bright Nickel and Chromium Plating." Hanson-Van Winkle-Munning Co., Matawan, N. J. Dr. D. G. Foulke spoke on "Analysis and Control of Plating Solutions." Sel-Rex Precious Metals, Inc., Belleville, N. J. Al Korbelak discussed "Precious Metal Plating and Analysis of Plating Solutions."

Bart-Messing Corp., Newark, N. J. Dr. D. S. Carr and A. G. Buschow spoke on "Purification and Filtration of Plating Solutions." Kosmos Electrofinishing Research, Inc., Belleville, N. J. J. Kosmos discussed "Cadmium and Zinc Plating."

Philadelphia, Pa. Temple Technical Institute, 1808 Buttonwood St., Philadelphia. Instructor: Dr.

Fig. 3—Edward F. Foley demonstrates effects of solution impurities upon deposits to electroplating class at New Haven College, New Haven, Conn. (PRODUCTS FINISHING staff photo)

Samuel Heiman, 5155 Westford Rd., Philadelphia, Pa.

The course has both lecture and laboratory phases. Called "Principles and Practice of Electroplating," it is sponsored by the Philadelphia Branch of the A. E. S.

Its purpose is to provide electroplating personnel and people in allied fields, such as metallurgists, electrotypers, and metal fabricators with an understanding of the principles of electrodeposition and the application of these principles to electroplating practice. The text used is "Modern Electroplating." Dr. Samuel Heiman, instructor, is president of the American Electroplaters' Society and chief chemist of the Philadelphia Rust Proof Co.

The entire course is given in three semesters. Those passing all three semesters are given a "Certificate of Proficiency" by the Temple Technical Institute.

Subjects discussed in the first semester include: preparation of metal surfaces for plating; types of cleaners for all metals, cleaner function and materials; pickling, hydrogen embrittlement, inhibitors, bright dips and electropolishing; and discussion of various plating metals: copper, cadmium, zinc and others. Such lectures include, in the case of each metal, such things as application, importance, history, bath composition, operating conditions, maintenance and control, and necessary calculations connected with plating and solution control.

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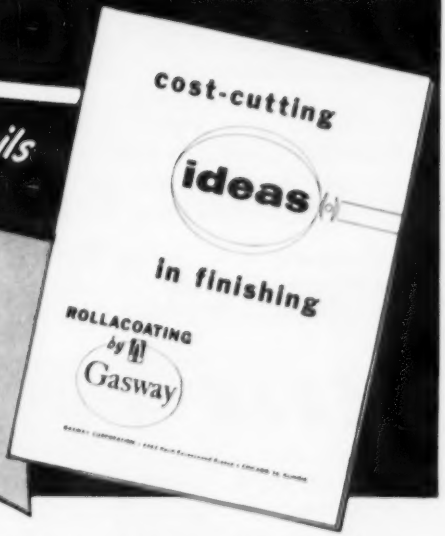

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Semester II continues the study of various metal plating solutions in much the same manner, considering the following metals: lead, tin, nickel, chromium, brass, alloy plating, silver and others.

Semester III includes: principles of chemistry, electricity and electrochemistry; character and distribution of electrodeposits; throwing power; structure of deposits; properties and testing of plated coatings; specifications; corrosion theory; polishing, plating power sources, and plating room equipment.

Providence, R. I. Central Senior High School, 170 Pond St., Providence. Instructor: Joseph A. Smith, Jr., 116 Wyoming, Warwick, R. I.

This two-year course in electroplating is designed as an apprentice training course. Students enrolled in the school attend day classes at employers' expense. The Providence School Department and the New England Manufacturing Jewelers' and Silversmiths' Association provide the facilities and supplies.

The first year course is entitled "The Science and Practice of Electroplating," and consists of four hours' instruction per week for a total of 144 hours. It includes both laboratory and lecture.

Subjects considered in this course include principles of chemistry and electrochemistry; factors governing the character of electrodeposits; bath composition; throwing power; preparation for electroplating; electrical

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BRIGHT STABLE — Even at extremely high current density ranges the effectiveness of Z-B-2 is not lowered. It stays bright! Z-B-2 is stable in plating solutions of ANY current density . . . . even at extremely high operational temperatures, and during "down" periods!

LIQUID — Because it's a liquid, Z-B-2 is easy to handle and requires no special mixing or blending. It is ready to use immediately!

LONG LIFE — Replacement schedules will be extended greatly because of the long life of Z-B-2!

BRILLIANT — PROMAT'S latest advancement in zinc brighteners gives a beautiful, lasting, decorative finish that cannot be duplicated!

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COMPATIBLE — This great new product of PROMAT'S has been carefully designed to be completely compatible in ALL zinc solutions!

LOW MAINTENANCE COST — PROMAT'S research and production team brings you this high-quality new development at very low maintenance cost!

With all these facts in mind, let us show you what this great new product can do for you. Our service engineers stand ready to give you actual proof of how Z-B-2 can serve you. Address your inquiries or write for technical bulletins on this or any of PROMAT'S great Protective Materials products direct to us.

PROMAT DIVISION – POOR AND COMPANY

851 SOUTH MARKET STREET, WAUKEGAN, ILLINOIS

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equipment; tanks and equipment; types of metals and solutions; discussion of metals deposited; buffing, burnishing, tubbing, tumbling; rack plating and rack design; and a discussion of testing and control.

The course for the second year is entitled "Control and Analysis of Electroplating Baths," and includes discussion of the following: analysis of various reagents used in plating; measurement of pH; discussion of various metals; other control and analytical methods.

Providence, R. I. University of Rhode Island Extension School. Instructor: Louis I. Kramer, 168 Gallatin St., Providence, R. I.

Rochester, N. Y. Rochester Institute of Technology, 65 Plymouth Ave., S., Rochester 8, N. Y. Instructor: Walter F. Swanton.

A course in electroplating is offered every two or three years. The course is held at the University, in cooperation with the Rochester Branch of the American Electroplaters' Society.

The first semester of the course consists of lecture and discussion. Its purpose is to present and analyze the principles of chemistry and electricity involved in electroplating. Topics included are: nature of matter, chemical reactions, electrochemistry, theory of plating, and control. Class meets once a week for 1½ hours.

In the second semester, following a review of electrochemistry, the course covers a study of corrosion, factors governing the character of deposits, preparation of base metals, equipment and methods of plating. The work in the laboratory illustrates the facts and principles discussed in the lecture course. The class meets once a week for an hour lecture, once for a two-hour lab.

St. Louis, Mo. Hadley Technical High School, 3405 Bell Ave., St. Louis. Instructor: Dr. Otto C. Klein.

San Antonio, Texas. Trinity University. Instructor: William P. Wisdom, 423 Quentin Dr., San Antonio 1A, Texas.

The course is sponsored by the San Antonio Branch of the American Electroplaters' Society. The branch furnishes reference books, plating demonstration equipment. The university provides classrooms.

The class meets one night each week, and is a two-year course.

Stroudsburg, Pa. Kushner Electroplating School. Instructor: Joseph B. Kushner, 115 Broad St., Stroudsburg, Pennsylvania.

Home-study correspondence courses for beginners and advanced students.

The elementary course is entitled "Electroplating Know-How," and is a general, basic and comprehensive course covering every phase of elec-

to page 50→

Portable Sandblast Gun

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HIGHER POWER ALKALINITY AT LOWEST COST

Get Dow caustic flake for economical, thorough stripping

Caustic soda flake direct from Dow . . . low cost, effective metal cleaning. These free-flowing, uniform flakes give users the very maximum in alkaline stripping power. Full *supply* of this unmatched caustic flake is assured through Dow multi-plant production: Midland, Michigan; Freeport, Texas; Pittsburg, California. Dependably prompt *delivery* is as certain, with the extensive Dow distribution network of terminals and regional stock points.

When a better stripping job at lowest cost can be yours for the asking . . . it's good sense to ask for Dow caustic flake *today*. THE DOW CHEMICAL COMPANY, Dept. AL 753K-2, Midland, Michigan.

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ULTRASONIC METAL CLEANING

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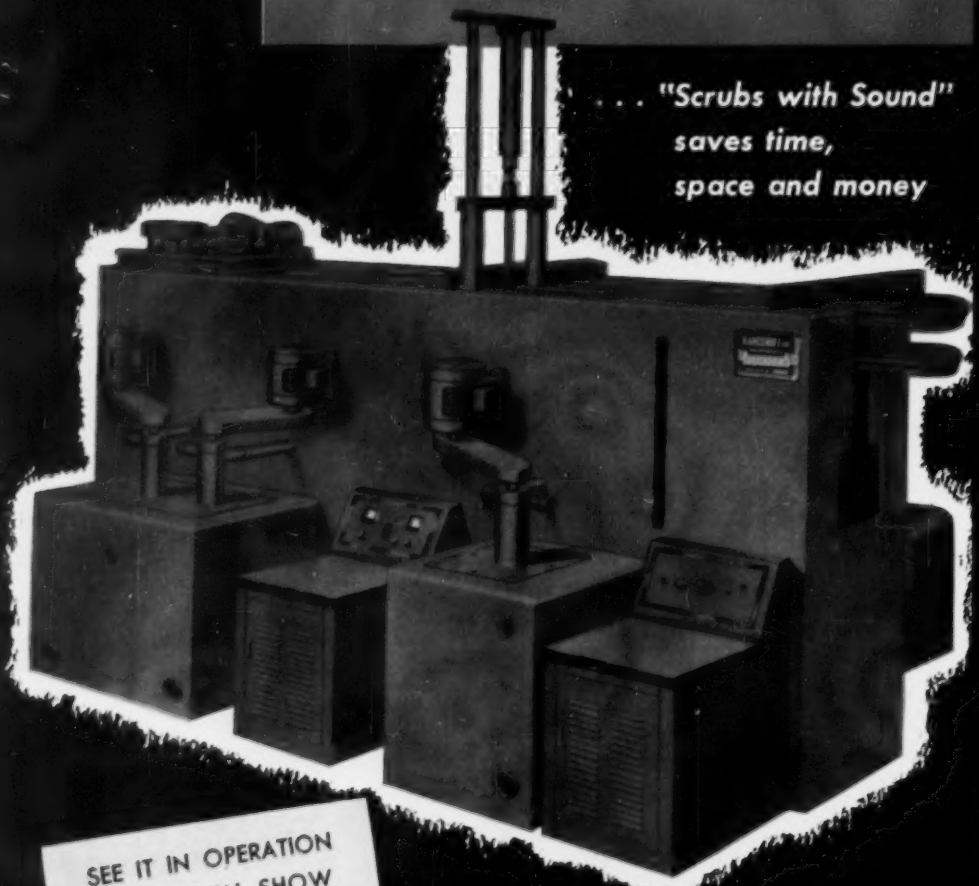
. . . "Scrubs with Sound"
saves time,
space and money



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— BETTER AT LESS COST

automatic indexing double monorail conveyor

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Combining an ingenious conveyor design with proven Bendix ultrasonics, the Ransohoff Conveyorized Ultrasonic System puts "impossible" cleaning jobs on an entirely automatic basis!

No part is too difficult to clean economically . . . regardless of blind holes and difficult recesses encountered in castings, engine parts, valve bodies. No part is too fragile for the thorough cleaning performed by this machine.

This 5 stage ultrasonic machine does a complete cleaning job, does it fast and automatically. Operations include: wash, rinse, ultrasonic cleaning, rinse and dry.

If you can't attend the show . . .
write now for complete details on the revolutionary Ransohoff Conveyorized Ultrasonic Cleaning System.

Ransohoff, Inc., 610 North Fifth Street, Hamilton, Ohio

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Training Courses . . .

troplating and metal finishing. The minimum educational requirement for taking the course is the equivalent of a grammar school education. A diploma is awarded.

A more advanced course is titled "Modern Hard Chromium Plating." It is intended for those who have completed the basic course or have a college education or the equivalent of a high school education and three years of practical experience in the field. The course covers in detail every phase of the subject, from basic metallurgy to control and operation of plating baths. A certificate is awarded to those completing the course.

A short course on "Water and Waste Control" is also available, and is suitable for platers and executives responsible for the operation of plating plants where anti-pollution laws and regulations are in effect. Educational prerequisite for the course is a high school education or completion of the basic course.

Prospective students may obtain full information on these courses by writing to the Joseph B. Kushner Electroplating School, 115 Broad St., Stroudsburg 5F, Pennsylvania.

Toronto, Ontario, Canada. Central Technical High School. Instructor: A. R. Moores.

Paint Technology Courses

Brooklyn, N. Y. Brooklyn Technical Evening High School, 29 Fort Greene Place. Instructor: William Lawrence.

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INTERLOCKING SECTIONS
The only lava coated ceramic type generators ever developed, they give more even, more intense far infra-red energy with less power consumption. Dark burning—no injury to eyes. Impervious to vibration, shock, vapor and moisture.
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therefore a minimum of maintenance expense in any application. Write TODAY for literature.
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NOW... Finish Precision Parts with EXOLON Tumbling Abrasives

Savings over old Hand Finishing Methods—50 to 80 Percent

Today, scientific research has developed equipment and abrasives for better barrel finishing. Such an abrasive is EXOLON, an electrically fused aluminum oxide, resistant to fracture and extremely hard. EXOLON is pretumbled to produce rugged shapes that stand up longer in operation. Results are always the same — batch after batch when operated in formulated finishing cycles.

Precision parts shown above were barrel finished with EXOLON to a predetermined stock removal and surface finish. Whether castings, stampings or machined parts, there is an EXOLON abrasive to meet your finishing needs.

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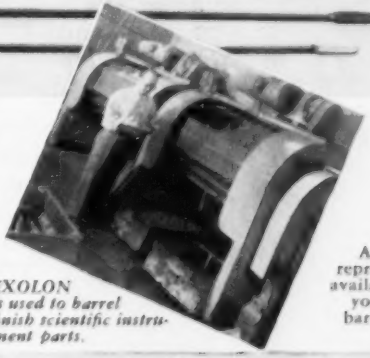

EXOLON is used to barrel finish scientific instrument parts.

An EXOLON representative is available to help you with your barrel finishing problems.

EXOLON Tumbling Abrasive is carefully graded in sizes from 2½ inches down to fine powders.

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Manufacturers of SILICON CARBIDE and ALUMINUM OXIDE ABRASIVES

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Free course in Paint Manufacture. This course will be a study of paints, paint ingredients, manufacture, control and sales. The subject will be treated in a non-technical manner.

For information concerning the course, write to James Striffler, Head, Brooklyn Technical Evening High School.

Brooklyn, N. Y. Polytechnic Institute of Brooklyn, 99 Livingston St., Brooklyn 1, N. Y.

Three courses in Paint Technology are offered.

Course titles are: "Oil, Resin and Varnish Technology," "Paint and Pigment Technology," and "Technology of Resins and Plastics."

Boston, Mass. Northeastern University, 360 Huntington Ave.

An evening course entitled "Paint Technology II" held at Northeastern University is sponsored by the New England Paint and Varnish Production Club. Students enrolled in the course include technical personnel of the paint industry, raw material suppliers and university students.

Typical topics considered in this course are "Mechanism of Corrosion," "Surface Preparation and Pretreatment," and "Formulation and Testing of Primers." The curriculum includes lectures by guest experts in the field.

"Ours is a genuine fish-oil base—"

Cleveland, Ohio. Case Institute of Technology, University Circle. Instructors: Dr. E. G. Bobalek, 2309 Lamberton; Dr. W. R. Park, 23580 Lake Shore; and Dr. W. von Fischer, 1792 Maywood.

A sequence of three coatings courses is offered, two for advanced undergraduates and one for graduate students.

A complete laboratory is maintained, wherein equipment is available to demonstrate unit processes of paint manufacture and application. Facilities are available for complete testing of functional and decorative coatings.

Three-day refresher courses and one-day seminars are held at irregular intervals for the purpose of reviewing new developments in the field of surface coatings.

Regular courses offered are:

"Introduction to Paint and Varnish Technology." This course consists of a two-hour lecture and a three-hour laboratory each week in the first semester of each year.

"Principles of Paint Formulation" is held during the second semester of each year and includes two hours

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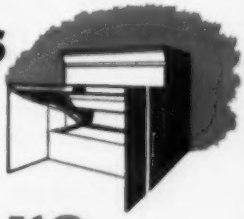
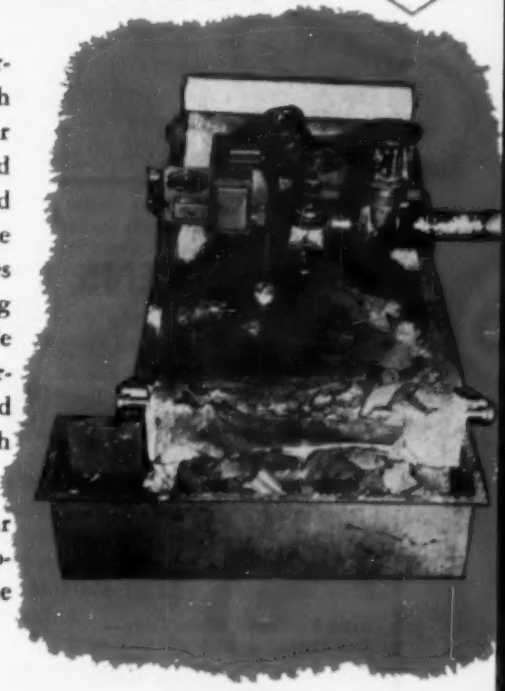


Delpark *WASH WATER* Filters



Wash water spray booths can be operated continuously when equipped with Delpark Filters. Costly shut-downs for cleaning are eliminated. Deactivated paint from the overspray is filtered from the wash water before it can be recirculated causing plugged nozzles or before it settles in the tank causing water displacement. The savings made by using Delpark Filters mean important profits for you through reduced maintenance costs and increased booth efficiency.

There's a Delpark representative near you to help with your specific problems. There's no obligation. Write today for further information.

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lecture and three hours lab weekly.

"Advanced Theory of Organic Coatings" is presented as a three hour lecture course during the second semester of alternate years.

Fargo, North Dakota. Department of Paints, Varnishes and Lacquers, North Dakota Agricultural College.

Three Paint Short Courses are held annually.

The courses, held during the summer, include a Paint Short Course for Beginners, an Advanced Paint Refresher Course and an Industrial Maintenance Coatings Course.

The Beginner's Course includes such topics as chemistry, modifications and usage of drying oils; principles of paint and varnish formulation, practical discussion on various means of paint and varnish applications, miscellaneous film forming materials and their usage, and others. Ten laboratory sessions of three hours each are also included in the course.

The Advanced Paint Refresher Course is held to acquaint experienced men with the latest developments in the fields of oils, resins, pigments, solvents, driers and so on. A B.S. degree in chemistry and one year's experience in the field, two year's industrial experience, or completion of the beginner's course are prerequisites for this course.

The Industrial Maintenance Coatings Short Course is designed for industrial maintenance engineers and large users of paint. It includes discussion of such topics as: "Paint Types;" "The Technique of Industrial and Maintenance Roller Painting;" "Protection of Ferrous Surfaces;" "Surface Preparation of Aluminum and Magnesium for Painting;" "Painting of Aluminum and Magnesium;" "Formulations of Chlorinated Rubber Coatings as They Affect Corrosion Resistance;" "Proper Selection and Use of Color;" "Making the Most of the Spray Painting Method;" "Evaluation of Spray for Maintenance Painting;" "Paint Blistering, Cracking, Peeling;" "Coatings for Exterior and Interior Masonry Surfaces;" "Selecting and Buying of Paint."

Los Angeles, Calif. Los Angeles City College, Evening Division. 855 N. Vermont Ave., Los Angeles 29, California.

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for all industrial screening... and for printed electrical circuits

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PRECISE REGISTRATION
PROOF SHEET WITH SCREEN

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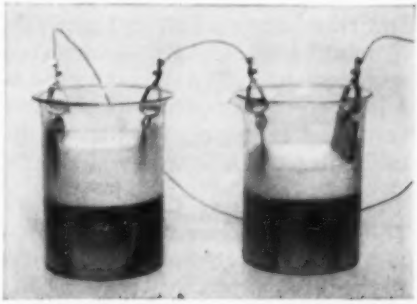
Pre-cleaning for
Barrel Plating Lines

How to control foaming and GUARD AGAINST EXPLOSION DANGERS *in electrocleaning*

Excessive foam build-up in the electrocleaner tank always creates a danger of explosion caused by build-up of trapped hydrogen and oxygen gases. In barrel plating, this excessive foam build-up is increased by the agitation of the solution as barrels are rotated.

Even under extreme agitation conditions, Diversey No. 12 electrocleaner minimizes the explosion hazard and produces superior cleaning. Due to its high current-carrying capacity, it is exceptionally fast-acting. And its high contamination capacity means longer periods between dumpings.



DIFFERENCES IN FOAM BUILD-UP *developed by two different electrocleaners are shown above. Beaker at left contains a conventional electrocleaner in general use: beaker at right contains Diversey No. 12 electrocleaner. A current of 125 amps. per sq. ft. on work is sent simultaneously through each beaker. Ordinary electrocleaner (left) produces a thick, heavy foam blanket which, in your cleaning tanks, would trap an explosive mixture of hydrogen and oxygen gases. In Diversey No. 12 electrocleaner (right) foam blanket is properly controlled.*

FREE-RINSING, NON-CAUSTIC SOAK CLEANER

In barrel cleaning, excessive solution is carried over from soak tanks to electrocleaning tanks. The result is two costly problems: (1) excessive carry-out means higher soak cleaner consumption; (2) carry-over of soil-laden solutions shortens electrocleaner life. Diversey No. 404 soak cleaner was specifically developed with extraordinary wetting action and water softening properties. Since these two factors combine to give faster rinsing and draining, No. 404 assures you a more efficient use of both soak and electrocleaning solutions. Soak cleaning solutions drain back into soak tank or are rinsed free.

Better wetting action also means better cleaning. Since immersion time in soak cleaner is limited, No. 404's fast-wetting (soil penetration) leaves more time in the cycle for actual cleaning.

For free illustrated brochures on Diversey metal cleaners, write Metal Industries Department, The Diversey Corporation, 1820 Roscoe St., Chicago 13, Illinois.

ADV.

For more data circle 175 on Reader Service Card

geles City College is offering two courses in Paint Technology, sponsored by and recommended by both the Los Angeles Paint & Varnish Production Club and the Los Angeles Paint, Varnish and Lacquer Association.

One course, entitled "Enamels and Varnishes," deals with resins, oils and related materials, and methods of manufacturing enamels, varnishes and specialties. The second course is a laboratory course on enamels and varnishes for students already enrolled in paint technology study.

Los Angeles, Calif. Roger Young Auditorium.

A Coatings Symposium for the West Coast protective coatings industry will be conducted by Hercules Powder Company, in Los Angeles, September 11-14.

The symposium is endorsed by the Los Angeles Paint and Varnish Production Club and the Los Angeles Paint, Varnish and Lacquer Association. It is designed to provide the West Coast protective coatings industry with up-to-date information on the important fundamentals of lacquer technology, as well as new developments in a wide variety of protective coatings.

The symposium has been divided into two sections. The first two days will be devoted to discussions of fast-drying industrial finishes based on nitrocellulose. The final two days will include discussions of chlorinated rubber and silicone finishes.

In addition to Hercules represen-

New! Improved!

—Now Better Than Ever!

Presently being employed effectively both in job shops and manufacturing plants on hardware, lamps, furniture, oxidize finishes, etc.

Now maintain a *completely* uniform brass color with

JELCO BRASS ADDITIVE

NON-CRITICAL • BOOSTS PRODUCTION • CUTS REJECTS

—Can be used in standard and high speed formulations . . . still and barrel plating

1. *Increases both efficiency and throwing power.*
2. *Produces brighter and faster plating.*
3. *Allows use of higher current density.*
4. *Retards anode polarization.*
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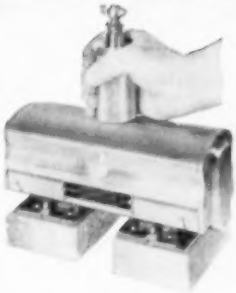
SUNDSTRAND AIR SANDERS

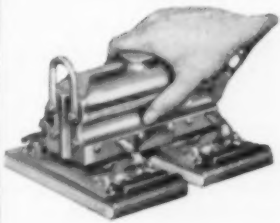
OS-700—new fast-action orbital sander. Single pad. Over 6000 cycles per minute. Removes material faster, easier. Built-in water attachment for wet sanding. 5 lb.

1000—light, fast, easy-to-handle straight-line sander. Big abrasive area. 2500 oscillations per minute. For wet or dry sanding. Palm lever controls both air and water. 7½ lb.

SP-101—versatile, single-pad, straight-line sander. 3000 oscillations per minute. Excellent for fine work on smaller pieces. 5 lb.



600—heavy-duty, straight-line model for sanding, pumice rubbing, or polishing. Sands wet or dry. 1100 oscillations per minute. 30 lb.



4000—9 lb., 2-pad, straight-line sander for longer, slower stroke. Built-in water attachment. 2100 oscillations per minute.

SUNDSTRAND MACHINE TOOL CO., Pneumatic Division, Rockford, Illinois

SUNDSTRAND

A name to remember in **AIR SANDERS**

For more data circle 177 on Reader Service Card

tatives, there will be two prominent guest speakers on the four-day program: Dr. Carl K. Fink, Carbide & Carbon Chemicals Company, will discuss "Balcancing Economy and Performance when Selecting Plasticizers and Solvents." Robert C. Hedlund, Protective Coatings Laboratory, Dow Corning Corp., will discuss "Silicone and Silicone Alkyd Resins for Protective Coatings."

The symposium will be opened at 9 a.m., September 11, with a welcome by R. L. Skov, manager, Cellulose Products Department, and William F. Power, manager, Synthetics Department, both of the San Francisco Office.

Subjects to be covered during the four-day session include: Principles of Lacquer Technology, Lacquers for Plastics, Fast-Drying Finishes for Aluminum and Steel, Furniture Finishes, Fast-Drying Floor Finishes, Cellolyn Resins for Wood and Metal Finishes, Chemical Plasticizers for Nitrocellulose and Vinyl Film-Formers, Cross-Linked Cellulose Derivative Coatings, Chlorinated Rubber Coatings, Pentaerythritol-Properties and Applications, and Rosin Resins as Modifiers.

All sessions of the symposium will be held in Los Angeles' Roger Young Auditorium. Industry representatives can either register on September 11, at Roger Young Auditorium, or make advance registrations at Hercules' Los Angeles sales office, 3460 Wilshire Boulevard. There is no charge for registration, or for attending the conference.

Newark, N. J. Rutgers University, University Extension Div., Newark Center, 33 Washington St.

Rutgers University and the New York Paint, Varnish and Lacquer Association sponsor "Fundamentals of Paint Technology."

The course includes lectures by guest experts in the field and trips to manufacturing plants in the area.

Further information is available from Rutgers University, University Extension Div., Newark Center, 33 Washington St., Newark 2, N. J.

New York, N. Y. New York University, Division of General Education, 1 Washington Square North. Instructors: Dr. Myron A. Coler, Elias Singer, Sidney Lauren.

Two surface technology courses

NOW
FUSECOAT "T"
coating of Tungsten Carbide
Licenses available
U.S. PAT. #2,694,647

LONGER WEARING FIXTURES
For Polishing and Buffing Machines

Your buffing and polishing fixtures that are subject to wear can now be FUSECOATED to last longer. Fixtures designed for FUSECOATING can be lighter and are less expensive for you to make. Procedure sheets are available. Write for folder or send us drawing or sample of part to be coated. We will send you a cost estimate and approximate delivery date by return mail.

FUSION METAL COATING CO. • 25493 W. 8 MILE ROAD DETROIT 19, MICHIGAN

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Enthonics
AT WORK

Go from GRIME . . . to . . . SHINE . . . in SECONDS!

Use ENTHONE Emulsion Cleaner 75

DIP . . . . steel parts to be cleaned in Emulsion Cleaner 75 for only ***15 seconds.*** This simple immersion is done at room temperature (no heating facilities required) and with no irritation of the operator's nose, throat or skin.

RINSE . . . in plain water.

DONE . . . and done ***thoroughly*** . . . in seconds! All heavy oil films and solid dirt have been removed from every corner and crevice . . . from slots, tapped holes and sculptured patterns.

INSURE . . smooth, bright, adherent electrodeposits.

WRITE FOR FREE LITERATURE ON THIS SIMPLE, FAST, SAFE . . . AND ECONOMICAL . . . METHOD OF CLEANING METALS.

ENTHONE
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442 Elm Street, New Haven 11, Connecticut
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for adults will be offered during the 1956 fall semester at New York University's Division of General Education, Dean Paul A. McGhee has announced. The courses are part of the Division's Program of Technical Studies.

"Fundamentals of Paint, Varnish, and Lacquer Technology" will meet on Wednesday evenings. Among the topics to be covered are coatings for protection, decoration, and functional purposes; raw materials used in organic coating; manufacture of organic finishes; and testing methods. Instructing will be Dr. Myron A. Coler, consulting engineer, and technical director of the Markite Company, New York; and Elias Singer, technical director of the Troy Chemical Company, New York.

A seminar in "New Developments in Organic Finishes" will meet on Tuesday evenings. The course is concerned with recent developments in high polymer chemistry and the requirements for finishes set forth by the armed forces. Dr. Coler, Mr. Singer, and Sidney Lauren, chemist in the finishes section of the Johns-Manville Research Center, Manville, New Jersey, will instruct.

A graduate course (evening) in paint technology is also offered. The course is listed as: "Technology of Surface Finishes." It is a graduate level discussion of the principles and techniques of surface protection and decoration of metal surfaces. It is based on the principles of corrosion and surface deterioration, the characteristics of the surfaces to be protected, and on the chemical characteristics of the available materials. Includes discussion of production problems, methods of application and evaluation of the inorganic and organic coating materials.

Interested persons may register by mail or in person from September 10 to 28. The fall semester begins in the latter part of September and ends in January. Further information can be obtained from the Division of General Education, New York University, 1 Washington Square North, New York 3, N. Y.

Philadelphia, Pa. St. Joseph's College, Evening Division, 54th St. and City Line Ave. Instructor: Dr. Willard H. Madson, Sales Service Division Head — White Pigments, E. I. du Pont de Nemours & Co., Sales Service Lab., Newport, Delaware.

A course in Paint Technology is offered in cooperation with the Philadelphia Paint, Varnish and Lacquer Association, and the Philadelphia Paint & Varnish Production Club.

This course is open to anyone who has had experience in the paint industry and wishes to enrich his knowledge of this subject. College training is not a prerequisite.

SILVER AND GOLD

"The course I took with you had a great deal to do with my being able to obtain a job in supervision in this large company. I value the lesson material very much. We have a large vault with a combination known only to me and higher supervision; it is there I keep the books you wrote—alongside the silver and gold!" writes the plating foreman* for a famous instrument company. You too will find silver and gold in this fabulous course. Investigate! Joseph B. Kushner Electroplating School, Stroudsburg 10F, Pa.

*Name on request

For more data circle **180** on Reader Service Card

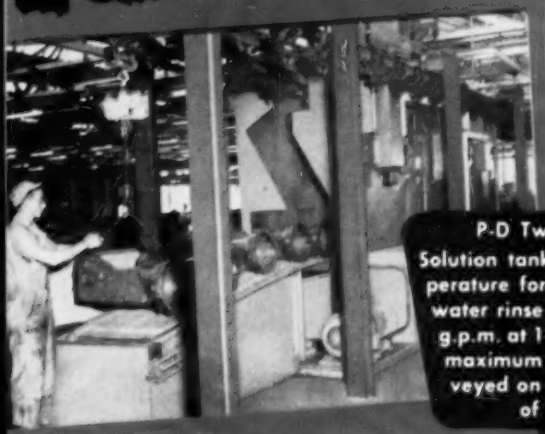
For more data on advertisement on opposite page circle **181** on Reader Service Card →

CLEAN UP your "DIRTY WORK"

OBTAIN PRODUCTION-GAITED EFFICIENCY

—with a PETERS-DALTON

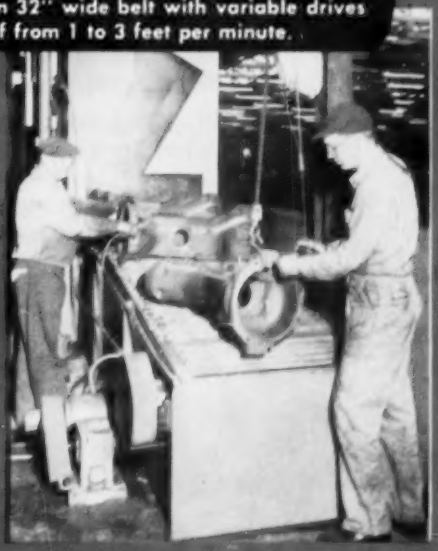
POWER SPRAY WASHER



P-D Two Stage Steam Heated Washer
Solution tank capacity is 1050 gallons. Tank temperature for caustic wash is 190° F. with heated water rinse of 180° F. — capacity of pumps 350 g.p.m. at 140 foot head. It is designed to handle maximum loads of 8000 lbs. per hour, conveyed on 32" wide belt with variable drives of from 1 to 3 feet per minute.

e P-D Power Spray Washer shown here is a work rse indeed. It was designed by Peters-Dalton engi- ers to deliver efficient cleaning operations for heavy ctor transmission housings and miscellaneous cast- gs weighing up to more than 250 lbs. each . . . ndling them with ease at a maximum speed of 30 the largest pieces per hour. The illustrations above the left) show tractor transmission housings being vered onto the conveyor belt for cleaning opera- ns. The photo (at the right above) shows these usings leaving the washer . . . note the man blow- out cavities before the housings are conveyed back final operations.

ters-Dalton Power Spray Washers are designed, gineered, and fabricated for the job, and installed th an economy of floor space. Whatever cleaning erations you require . . . regardless of size, large small . . . you can depend upon the more than arter century of P-D know-how to deliver and install e washer most efficient for your needs.



We will be glad to tell you more— just write, wire or phone.

Representatives in Principal Cities

Hydro-Whirl Paint Spray Booths
Industrial Washing Equipment
Drying and Baking Ovens
Hydro-Whirl Dust Collecting Systems

PD Peters-Dalton INC.
A SUBSIDIARY OF DETROIT HARVESTER CO.
17900 Ryan Road • Detroit 12, Michigan

Lectures are given one night a week for 2 hours, beginning in October and continuing through May.

Topics considered include: exposure and paint testing, emulsion paints, vehicles, white pigments, extender pigments, hiding power, rheology of paint systems, solvents and thinners, paint additives and color matching.

Porcelain Enameling

No specific courses in Porcelain Enameling are listed here. Fortunately, complete, four-year courses in ceramics and ceramic engineering are available in many colleges and universities. These colleges include: Alfred University, Alfred, New York; Ohio State University, Columbus, Ohio; University of Illinois, Urbana, Illinois.

Spray Painting Courses

Chicago, Ill. Binks Manufacturing Co. School of Spray Painting, 3118-40 Carroll Ave., Chicago 12, Ill. Instructor: William Beacham.

The school is open to anyone interested in, or connected with, the industrial application of paint and coatings. Previous experience is not necessary, but in the past most members have been associated with industries or firms which use spray painting equipment.

Fig. 4—William Beacham, director of the Binks School of Spray Painting, explains the theory of spray painting to his class.

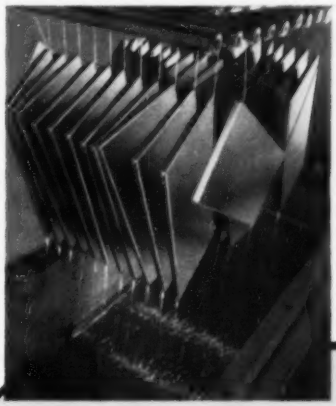
Fig. 5—Individual instruction is featured by DeVilbiss Company's School of Spray Painting.

The one-week course includes discussion of such equipment as paint circulating systems, fluid handling pumps, oil and water extractors, flock equipment, compressors and all auxiliary equipment. Class members operate the equipment, disassemble it, put it back together again, and then conduct tests to see that it is in the proper adjustment.

Defects encountered in actual production finishing are deliberately produced and the students are required to analyze the fault and then make corrections.

Instruction is given by William Beacham, nationally known paint chemist and spray painting authority, who is also director of the Binks

Use it COLD on all metals



in a drum...

in a tank...

or in your regular vapor degreasing machine.
No Special Equipment Needed!

KLEARALL 95

COLD DEGREASING SOLVENT

NOW . . . degrease light oils from metal parts without vapor . . . without heat . . . without rinsing . . . with KLEARALL 95. Profit by these KLEARALL 95 advantages:

- **Permits degreasing at any location or at one centralized point.**
- **Avoids production-line bottlenecks, even in coldest weather.**
- **Is non-explosive; won't support combustion in itself.**
- **Low tank evaporation.**
- **Evaporates speedily from finished work.**
- **May be redistilled dozens of times with high recovery.**
- **Has no objectionable toxic odors.**
- **Contains no Carbon Tetrachloride.**
- **Is exceptionally stable and non-corrosive.**

Cut your degreasing costs in half over the vapor process! Investigate KLEARALL 95. Get the facts for your factory. Special, technical data available to paint manufacturers.

Photograph courtesy of Supreme Steel Products, Inc. Maspeth, L. I., New York

OCTAGON PROCESS INC

Write for Fact Sheet #2,
Distributorships Available

STATEN ISLAND 1, N. Y.

For more data circle 182 on Reader Service Card

Research Department. The school is housed in special quarters and makes use of the latest audio-visual aids in the instruction.

Students with similar backgrounds or problems are grouped together wherever possible. Because the class is limited to 25 students, personalized attention is given.

There is no cost or obligation in attending the Binks School of Spray Painting. Students pay only for their living accommodations and their transportation to and from the school, located in the company's main plant in Chicago.

There are four classes scheduled for the 1956 fall term: Sept. 10-14, Oct. 1-5, Nov. 12-16, and Dec. 3-7.

TRUE BRITE BRASS SOLUTION

A foolproof solution which has been in use over 6 years in light and heavy production.

- Ready To Use—Just Add Water
- No Variance in Color
- Trouble-Free—Little Supervision Needed
- Low Cost—Additions only once a day

Available in a variety of colors. Will match your sample.

Write for technical bulletin and prices.

TRUE BRITE CHEMICAL PRODUCTS CO.
Box 31, Oakville, Conn.

For more data circle 183 on Reader Service Card

Because of the small size of the class, it is important that application for attendance be made as far in advance as possible. This may be done by writing E. F. Watts, Binks Manufacturing Co., 3118-40 Carroll Ave., Chicago 12, Ill.

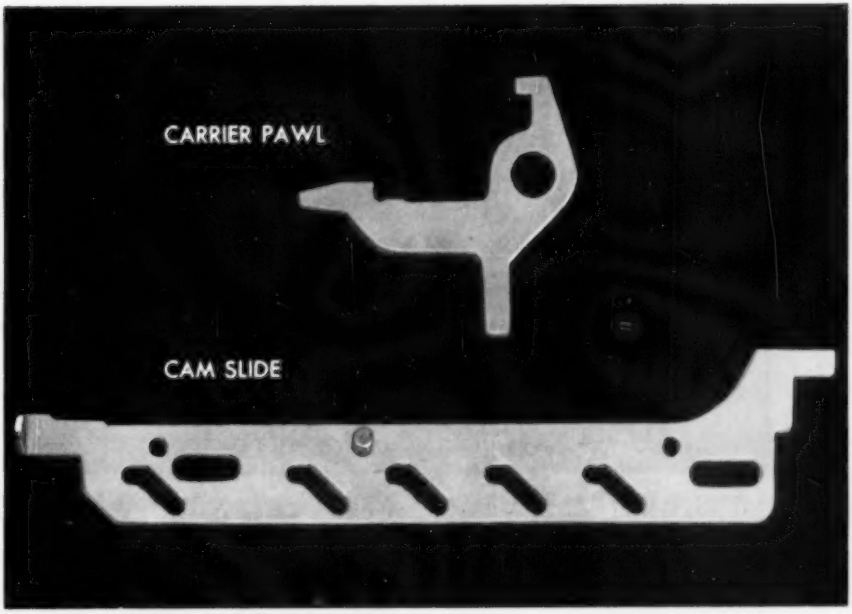
Toledo, Ohio. DeVilbiss Company School of Spray Finishing, 300 Phillips Ave., Toledo 1, Ohio. Instructor: I. B. Thomas.

The spray painting course begins in the classroom where the spray gun is explained. The theory sessions extend to the other equipment which a spray operator will use. Every item constituting a complete spray painting outfit is thoroughly covered. Air pressures, material viscosities, film thicknesses and all of the ramifications of painting are discussed. The pupils are also taught to assemble and disassemble equipment.

After the classroom work, the group is taken into the laboratory where everyone is given an opportunity to prepare materials and spray them. Each student is taught the use of the gun. The classroom theory is put into actual practice so that students can see for themselves the results which correct techniques produce.

Starting dates for forthcoming courses of instruction in industrial spray finishing are: September 10, October 8, November 5, and December 10.

Enrollment in the school is free, the only cost to the student being his board and room. Enrollment applications may be obtained from the DeVilbiss Co., 300 Phillips Ave., Toledo 1, Ohio.



At Underwood Corporation . . .

HONITE Method Saves $11,750 On Finishing Precision Stampings

The Underwood Corporation, Bridgeport, Conn., puts 1000 *different* precision-made parts into their standard adding machine. Recently this company switched to the Honite barrel finishing method . . . and look at some typical results!

CARRIER PAWL *Cold-rolled steel. About 1,000,000 made each year. By the old hand-finishing and tumbling methods, it took 15 separate operations to make each pawl — from blank to finish-plated. Honite Method cut the* total *number of steps to 6 — with an annual saving of $11,750!*

CAM SLIDE *Cold-rolled steel. Sides must be extra-smooth — tolerances held to .002" - .003". Old hand-honing method required 3900 man-hours per year. Honite Method has cut annual man-hours to 500!*

The average overall cost for finished parts by the old method varied from $.70 to $1.10 per 100 pieces. The Honite Method cut costs to an average of $.10 per 100 pieces — a 91% saving. The company's investment in Honite barrel finishing equipment was paid off in *less than a year!*

You, too, can cut costs with the Honite barrel finishing method. Call your Honite Sales Engineer today or write Minnesota Mining and Manufacturing Co., Dept. FI-96, St. Paul 6, Minn., for free booklet: "Facts and Figures Report on Honite Barrel Finishing."

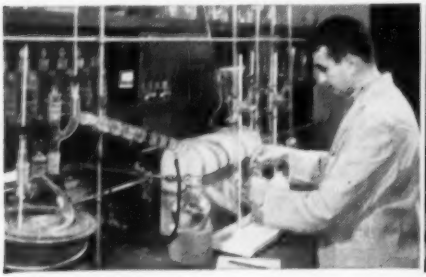
Honite BRAND

Made in U.S.A. by **MINNESOTA MINING AND MFG. CO.** General Offices: St. Paul 6, Minn. In Canada: P.O. Box 757, London, Ontario. Export Sales Office: 99 Park Avenue, New York City.

For more data circle **184** on Reader Service Card

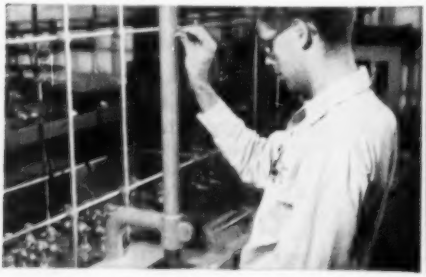
Pittsburgh offers you the

● **Pittsburgh Plate Glass Company's** new Paint Research Center at Springdale, Pa., contains the n modern laboratories devoted exclusively to the creation and experimental production of new finis



● **A necessary part** of research and development is the creation of new chemical vehicles to improve industrial finishes

● **Resistance to corrosion** from moisture humidity, salt spray and detergents is checked by a series of immersion baths.



● **Flexibility, adhesion and toughness** are measured by severe impact tests under extremes of temperature and humidity.

● **Test panels** are baked in gas-fired oven to reproduce conditions found in various type of industrial applications.

skill and experience of its

415 Finishes Technologists

You can get better finishes for your products and more efficient ways to use them . . . without increasing your payroll.

TO HELP YOU get consistently better finishes for your products, Pittsburgh now offers you the most modern facilities for fundamental and applied research in the paint industry.

● **In its new** Paint Research Center at Springdale, Pa., and in the development departments of its 11 paint plants, Pittsburgh maintains a staff of 415 chemists, engineers and technicians.

● **The creative work** of this highly trained group is supported in a practical way by an experienced field sales and service staff.

● **Objectives of this group are:** 1) to make better finishes for *today's* products from existing materials; 2) develop new finishes for *tomorrow's* goods from new chemical compositions and; 3) devise more efficient ways to *apply* them.

● **Bring your finishing problems** to us. You can have the benefit of our facilities and the creative ability of our technologists to help you develop superior coatings without adding to your payroll. Pittsburgh Plate Glass Company, Industrial Finishes Division, 1 Gateway Center, Pittsburgh, Pa.

PITTSBURGH PAINTS

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

For more data circle 185 on Reader Service Card

THE UDYLITE HI C
BRIGHT NICKEL

The Only High Chloride Bright Nickel

SAVES NICKEL

With the better throwing power, less nickel is used to get minimum coverage requirements in recesses.

Baths with lower nickel concentration are used to get the same results —⅓ less nickel concentration—decreased dragout losses.

The best anode corrosion of any nickel bath means fewer anodes needed —reduced nickel inventory.

SAVES TIME

Faster plating with 50-100% more amperage without burning regardless of agitation method used. Even where agitation is not available this same improvement prevails.

Faster plating with higher bath temperature—can be as high as 190°F.

Highest tolerance of any bright nickel bath to zinc, copper, iron, chromium, chromic acid and other common inorganic impurities, no problems with hard water, and excellent tolerance to organic impurities—less shut down time of any bright nickel bath.

SAVES POWER

Less voltage required with the better conductivity of the Hi C. Bright Nickel Bath. It means higher current with same voltage or same current with lower voltage.

• • •

Exceptional Bright Plate Range—Excellent Leveling—Fast Rate of Brightening—Best in Ductility—Easy Control.

If you are not using Udylite Hi C.—you haven't tried it.

THE Udylite CORPORATION
DETROIT 11, MICHIGAN

WORLD'S LARGEST PLATING SUPPLIER

Standardized Machine for Plating

To meet demands for higher plating production and offer a plating and processing machine at lowest possible initial cost, The Udylite Corporation recently announced its new Cyclemaster. Udylite engineers say this completely automatic plating machine offers the greatest production of any machine built with comparable floor size.

Low initial cost is aided by standardization. All Cyclemaster models have the same overall length, width and height. Changes are made in the lengths of the various process tanks to accommodate the desired processing cycles and rack sizes.

Each machine is 41 ft., 6 in. in length; ideal for cadmium and zinc plating and for copper-nickel-chrome, too, where the cycle will fit into its standard length. The Udylite Corporation found out that a machine of these specifications would meet requirements of over 50% of the plating work.

The Udylite Cyclemaster is a fully automatic machine. A shop man can operate it. One man can handle both loading and unloading.

Like other Udylite Fully Automatic machines the Cyclemaster is factory assembled.

(Adv.)

←For more data circle **186** on Reader Service Card

Control of Chromic Acid Mist

Zero-Mist, the new surface-active additive for chromium plating solution control has been given enthusiastic approval by platers.

Udylite Zero-Mist is a completely stable, surface-active additive for decorative chromium plating baths. It eliminates mist and spray. When Zero-Mist is added, a thin curtain of foam forms at the solution surface, and holds mist and spray.

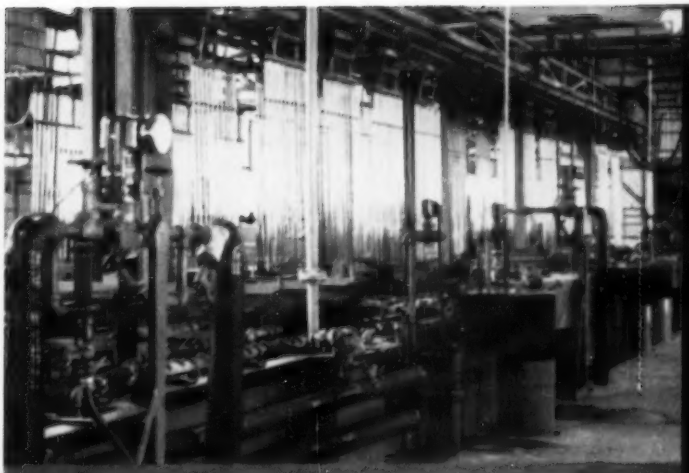
While Udylite does not recommend elimination of proper ventilation in any chromium plating operation, there are reports of many platers using Zero-Mist successfully without washing the exhausted air. Zero-Mist has also proved beneficial where wide tanks are difficult to ventilate.

From the dollar standpoint, Zero-Mist has shown remarkable savings to platers. Tests have shown Zero-Mist to cut chromic acid waste up to 70 per cent.

The concentration of Zero-Mist varies with the bath temperature, especially its surface temperature. At lower temperatures, lower concentrations of Zero-Mist can be used. Temperatures of about 105 deg. F. are most economical for initial makeup.

(Adv.)

For more data circle **187** on Reader Service Card→



PLATING 2000 GOLF SHAFTS AN HOUR ON THE UDYLITE FULL AUTOMATIC

True Temper Profits with Plating Precision

Smooth operation of the Udylite Full Automatic machine has made the big difference in the nickel and chrome plating of golf shafts. The rejections due to plating defects are negligible as positive automatic action eliminated the constant hazards of hand operations.

The regulated speed of lift allows sufficient time for drainage resulting in saving some 50% of the plating solutions formerly lost—a considerable reduction in the use of nickel and chromic acid.

Plate deposit is controlled very closely—this equipment produces 2000 pieces per hour all with a fine degree of uniformity. The variable speeds of the machine itself permit True Temper to predetermine and maintain the plate deposit without changing the time or efficiency of the cleaning cycle.

These and many other unique advantages of Udylite engineering are shown in the new Full Automatic bulletin—write for your free copy.

THE Udylite CORPORATION
DETROIT 11, MICHIGAN

WORLD'S LARGEST PLATING SUPPLIER

Steve A. Blount, Editor

SPOTLIGHTING FINISHING PROGRESS

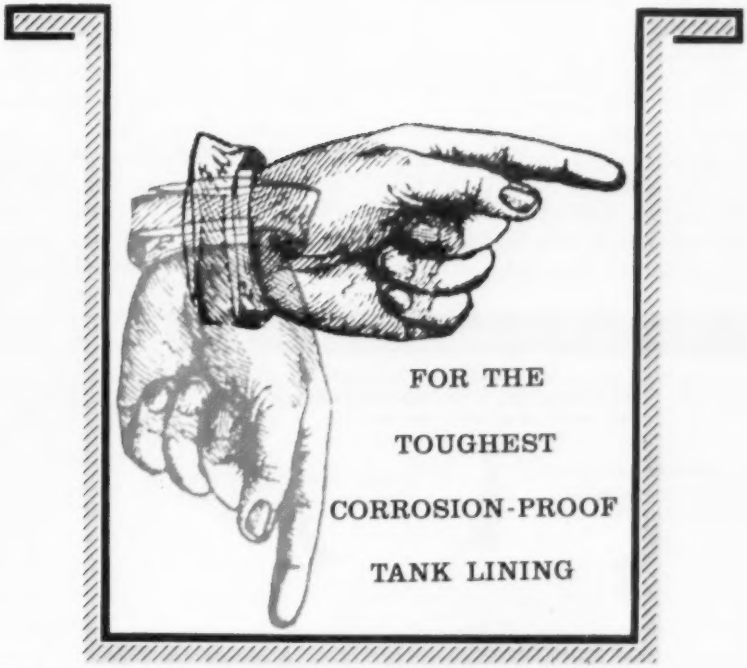
Electroplated Diffusion Alloys

Research on elevated-temperature properties of electroplates has demonstrated the importance of appropriate plating conditions for promoting oxidation resistance. It has also led to new knowledge about the formation of diffusion alloys and revealed an important factor in the failure of metal-coated molybdenum structures, which, if overcome, might lead to improved electrodeposits for protecting molybdenum against oxidation at high temperatures.

These results of research done for the Navy Bureau of Aeronautics by Battelle Institute, Columbus, Ohio, were revealed in a paper given at the 43rd Annual Convention of the American Electroplaters' Society, Washington, D. C. The paper, "Properties of Electrodeposits at Elevated Temperatures," was written by W. H. Safranek and G. R. Schaer.

Plating conditions such as current density and bath composition were responsible for large changes in the thermal stability and density of electrodeposits of nickel and chromium, alone, or in combination. Best thermal stability of nickel plates was obtained by using a nickel sulfamate plating bath.

In their research at Battelle, Safranek and Schaer found that alternating layers of electrodeposited nickel and chromium could be transformed into a homogeneous nickel-chromium alloy by diffusion of the two metals at 1800 deg. F. Even though this temperature was much below the melting points of the two



specify AMER-PLATE VINYL SHEET

—*molded* under 750 psi at 350° F. for maximum density.

Unlike other vinyl sheet linings, Amer-Plate is neither laminated nor calendered, but is molded under pressure and heat. The remarkable result is a smooth, extremely dense membrane, impervious to most plating and pickling solutions, oxidizing acids, alkalies and salt solutions. Being non-toxic and non-contaminating, it also may be safely used for lining tanks for food products.

Seams are easily heat-welded to provide a continuous impenetrable layer. Sheets are available in standard 1/32" and 3/16" thicknesses in both black and light gray.

Maximum adhesion is achieved with Amer-Plate 20Y Adhesive. This remarkable product bonds the Amer-Plate tenaciously to wood, steel and concrete surfaces so that once it has set, it is almost impossible to remove. Even in immersed temperatures as high as 160°, Amer-Plate 20Y Adhesive and Amer-Plate sheet lining remain completely unaffected. Amer-Plate membrane sheathed with acid-proof brick is an unbeatable combination for protection of high temperature pickling tanks and other critical applications.

Although Amer-Plate is resistant to most normal abrasion, if damaged, it can be repaired easily (even years later) right on the job.

Factory trained Amer-Plate applicators are located in all major cities to give you *immediate* service. You can be assured of expert workmanship—in the least amount of time. For additional technical data, please write:

Expert Application Insures Uniform Results

Electronically Tested Before Use

Ready For Years Of Dependable Service

Amercoat CORPORATION

Dept. EI
4809 Firestone Blvd.
South Gate, California

Evanston, Illinois • Kenilworth, New Jersey • Jacksonville, Florida • Houston, Texas

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metals, it was sufficient to produce an alloy in four hours' time.

Experiments to determine the resistance of several types of electroplates to oxidation at elevated temperatures led Safranek and Schaer to the conclusion that neither nickel nor chromium alone could withstand oxidation as well as the nickel-chromium diffusion alloy. Nickel and chromium alone oxidized at about the same rate, which decreased as length of exposure to the oxidizing atmosphere increased. The nickel-chromium diffusion alloy oxidized slower than nickel or chromium alone, but faster than a wrought nickel-chromium alloy. According to the Battelle technologists, the diffusion alloy's higher oxidation rate is accounted for by grain-boundary diffusion and internal oxidation.

Chromium-iron and cobalt-tungsten - chromium alloys produced by electroplating in multimetallic baths showed, respectively, slightly less and considerably more resistance to air oxidation than nickel or chromium alone. The oxide scale formed on chromium and its alloys was brittle and spalled easily. Nickel and nickel-chromium alloys, on the other hand, had dense, tenacious oxide scales.

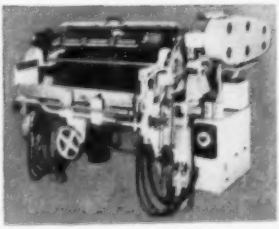
Hoping to find

Offering the Most VERSATILE Line of Surface Finishing Machines

Thanks to customer assistance, our series No. 300 Clair machines are now available to all !

Completely modified without changing any basic principles !

Efficiency of operation is vastly improved !



Not 9' 4" but NOW only 6' in width!

Spindle motors are mounted at inboard rear!

Illustrated is Model No. 304 of the entire 300-series!

Weight of motors removed from main pivot shaft to improve sensitivity of buff float!

Interchangeability of components with all previous Clair models

CLAIR

Let us know YOUR finishing problems for a detailed answer

MANUFACTURING CO., Inc., OLEAN, N.Y.

Offering the Most VERSATILE Line of Surface Finishing Machines

For more data circle 189 on Reader Service Card

RANSBURG *Electro-Spray* DOES IT BETTER... FOR LESS

Look what Ransburg Electrostatic Spray painting is doing in this eastern job shop, the Del-Val Finishers Division of J. W. Rex Company, Lansdale, Pa.

As a job shop, Del-Val handles a variety of work each month, painting hundreds of thousands of pieces and parts of various sizes and shapes.

The versatility and flexibility of Ransburg Electro-Spray makes it ideal for their varied painting requirements. Here's a typical example. Del-Val recently completed a contract for a Philadelphia manufacturer of barbecue trays with these results:

50% INCREASE IN PRODUCTION

50% SAVINGS IN LABOR and OVERHEAD

66% CUT IN PAINT COSTS, with improved, more uniform, and higher quality finish.

The job—flat sheet steel, 11" x 19"—enamel coated to withstand a 90 bend with sharp radius. Full coat one side; mist coat other

WITH RANSBURG ELECTRO-SPRAY		BY FORMER HAND SPRAY	
Output, 375 panels per hour with 3 men		Output, 250 panels per hour with 4 men	
	per panel		per panel
Labor and overhead	.06	Labor and overhead	.12
Paint & lease cost	.017	Paint cost	.044
TOTAL COST	.077	TOTAL COST	.164

Want to know what Ransburg Electro-Spray can do for you in YOUR finishing department? Write for our new No. 2 Process brochure. It tells the WHAT & HOW of electrostatic spray painting, and with numerous production-line examples, shows how other manufacturers are cutting finishing costs . . . increasing production, and improving the quality of their work with Ransburg equipment. Too, we have available now a new movie, "The Big Attraction," a 27-minute sound and color film on electrostatic spray painting.

Ransburg ELECTRO-COATING CORP.
Indianapolis 7, Indiana

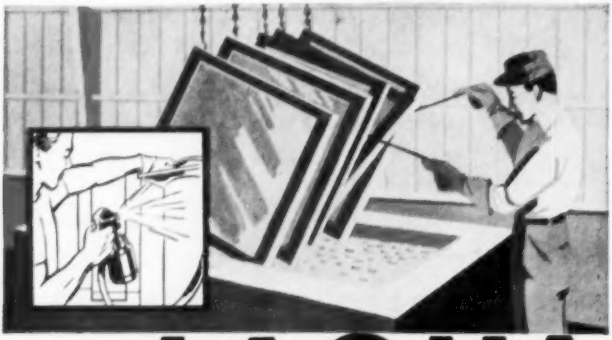
RANSBURG

For more data circle 190 on Reader Service Card

an electrocladding for molybdenum with an improved oxidation resistance, the Battelle electrochemists plated molybdenum specimens with alternate layers of nickel and chromium, starting with chromium, which can be applied to molybdenum with relatively simple procedures.

When nickel-chromium clad molybdenum is exposed to air at 1800 deg. F. for varying periods, molybdenum forms a diffusion alloy zone with the nickel and chromium and diffuses intergranularly about five times as fast as it forms the alloy zone. The molybdenum that diffuses intergranularly through the electrocladding volatilizes as molybdenum trioxide after reaching the air. Although no blistering or pinholing could be seen in the cladding or scale, eight per cent of the original weight of the specimen was lost during a 100-hour exposure trial at 1800 deg. F. Molybdenum could be completely prevented from diffusing through the electroplating, according to the Battelle researchers, by plating a thin gold barrier layer to the first chromium plate and then plating the gold with alternating layers of chromium and nickel. The molybdenum - chromium diffusion zone beneath the gold

preserve and protect chemically-cleaned and electroplated surfaces by dip or spray



WITH LAQUA

- **LAQUA** displaces water from a surface and at the same time deposits a thin protective film thereon. It eliminates the drying operation after plating.
- **LAQUA** does not interfere with electrical contacts.
- **LAQUA**-coated metals can be spot welded . . . it improves soldering operations.
- **LAQUA** prevents oxidation, sulfer discoloration and fingerprinting of parts during storing and handling.
- **LAQUA** resists salt spray and humidity.
- **LAQUA** can be recoated with almost all finishes.

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FIDELITY CHEMICAL PRODUCTS CORP.

472 Frelinghuysen Avenue, Newark, New Jersey

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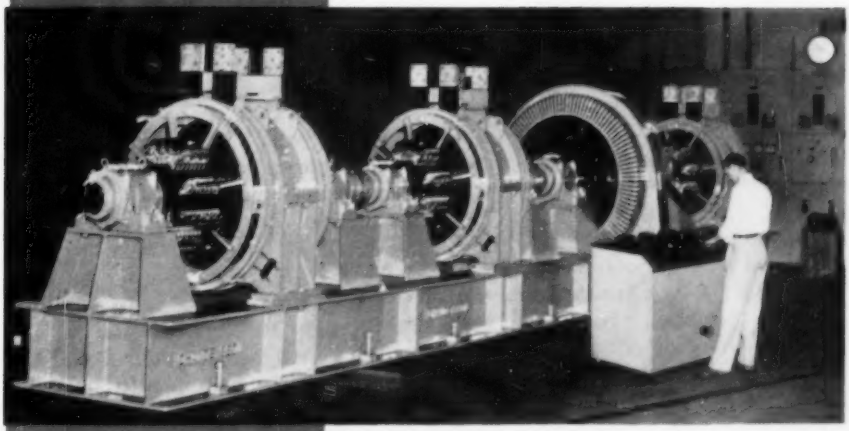

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MOTOR GENERATORS

are tested relentlessly to assure you a top-efficiency, low-voltage power supply

Before leaving our plant, each Chandeysson generator is run for at least 12 hours at 110% of voltage and 115% of current . . . simultaneously. Performance data is scrutinized by skilled engineers using the most modern electrical testing equipment.

Testing such as this is one reason for the remarkable dependability and high efficiency of Chandeysson equipment. In addition, unified responsibility for the manufacture of every component . . . from selected raw materials to the finished product . . . is in the hands of skilled men who have decades of experience in building low-voltage generators. Our aim in engineering is to *prevent* design defects . . . rather than to correct for them. This is why more and more "Steel Industry Leaders Choose Chandeysson!"

MAKE US PROVE to you that a Chandeysson Motor Generator set is your most economical and dependable source of low-voltage dc . . . for tinning or any other electrolytic purpose. Mail this coupon today . . .

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4082 Bingham Avenue, St. Louis 16, Mo.

Please send steel mill bulletin.

Name ..... Title .....

Company .....

Address .....

City ..... Zone ..... State .....

CHANDEYSSON ELECTRIC COMPANY 4078 Bingham Avenue, St. Louis 16, Missouri

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layer grew as rapidly as without the gold, but the molybdenum did not pass through the gold layer.

★ ★ ★

Plating Porous Alloys

Porous electroplates of an alloy of nickel and cadmium have been produced by electrochemists at Battelle Institute, Columbus, Ohio. In previous research, Battelle technologists determined how to produce porous electroplates of such single metals as nickel, zinc, and copper. The present study, results of which were presented in a paper given at the 43rd annual convention of the American Electroplaters' Society in Washington, D. C., describes the conditions needed to produce a porous electroplate of an alloy of nickel and cadmium.

The conditions leading to such a porous alloy were fairly rigid, according to L. D. McGraw, J. P. Spenard, and C. L. Faust, authors of the paper. Aqueous solutions of sulfate and chloride salts of nickel and cadmium form the electrolytic bath. This bath will only produce porous plates in the acidity range of pH 5-6. Best results were obtained when the bath was operated at 135 deg. F. with a current density of 150 a.s.f. Little control could be exercised over plate composition in excess of five per cent cadmium at the high pH of 5-6 required for plating a porous alloy from the sulfate-chloride bath.

The Battelle technologists found that when porosity was not a requirement, the sulfate-chloride bath could be operated to produce a fair range in the proportion of cadmium to nickel, while a wide range of cadmium to nickel could be obtained using a fluoborate bath. Such ranges in composition were obtained by operating the baths below pH 5-6.

Plate thicknesses up to 0.015 inch, considerably thicker than decorative electroplates, were produced in this experimentation, which was conducted for the U. S. Army Signal Corps Engineering Laboratories.

★ ★ ★

Manufacturers' literature can help you solve finishing problems and select the best methods and materials. See "Product Literature" section of PRODUCTS FINISHING, beginning on page 154.

Randolph

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BETTER FINISHES for your products

LACQUERS • ENAMELS
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COLORED LACQUERS
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IMMERSION HEATER

BUILT-IN CONTROL... for FAST, LOW COST, OPERATIONS

- CORROSION RESISTANT
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- LENGTHS FROM 12" to 48"
- RATING—from 500 to 5000 WATTS and 115 — 230 VOLTS
- AVAILABLE IN QUARTZ or STAINLESS STEEL

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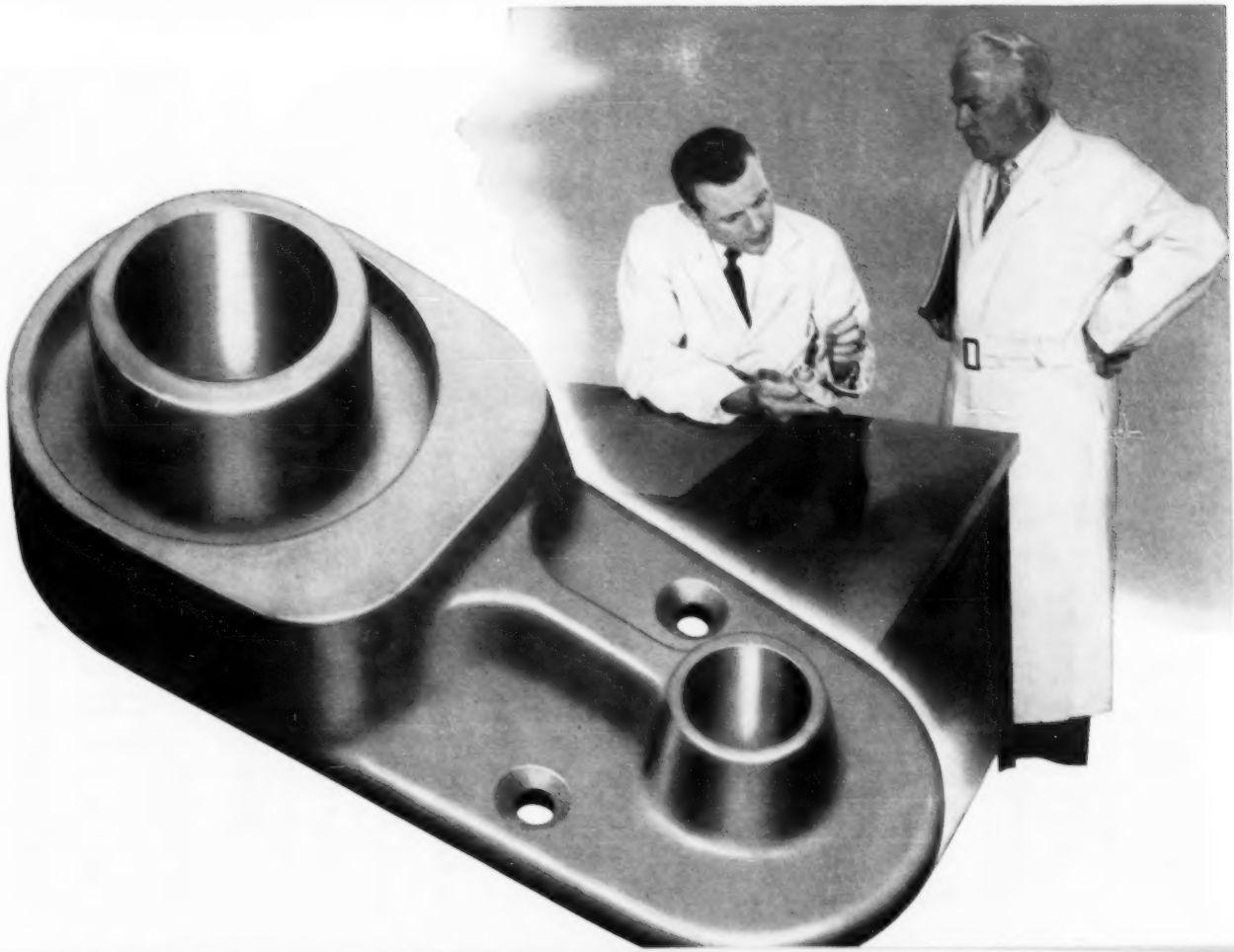

They said it couldn't be spray-painted AUTOMATICALLY

. . . but DeVilbiss automatics are spraying this complex part—with a fully-covering, uniform finish!

The deep recesses, irregular contours, and compound forms of this 4-inch die casting would ordinarily rule out automatic painting.

In fact, uniformly coating its internal and external corners, cylindrical as well as flat areas—in at least six different planes—presents a problem that finishing experts find difficult to do, even by hand.

Yet, today, a DeVilbiss automatic spray machine is doing the job to perfection, attaining, in one coat, a high-lustre finish which rivals most two-coat finishes.

Solving a problem like this—which other spray methods are unable to handle—is a regular occurrence with DeVilbiss. It takes more than ordinary spray equipment. It's the full knowledge of materials, production methods, and spray techniques—combined with the most versatile automatic spray equipment available—that enables DeVilbiss to bring remarkable savings to its customers, and attain quality finishes on components of any size or shape.

Why not let us test run your product under simulated plant conditions in our customer lab? We'll report actual costs, plus projected savings over your present system . . . without obligation. Our nearest representative will gladly make arrangements for you now.

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Toledo 1, Ohio

Santa Clara, Calif. • Barrie, Ontario • London, England

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For more data circle 195 on Reader Service Card

Practical Applications of Modern Products

Overhead Conveyor Used in Painting Screen

The usual method of painting flat screen is to convey it on rollers in the horizontal position through the various finishing processes. This method of transporting the screen isn't always the easiest thing to fit into an existing plant layout, however. Take a look at how the Ingersoll Products Div. of Borg Warner Corporation and Jervis B. Webb Co. solved this problem.

Ingersoll Products Division of the Borg-Warner Corporation recently introduced a new product, "Koolshade Sunscreen," that made a big hit on the market, and it was necessary to increase production as fast as possible. The new product is a louvered screen (Fig. 1) consisting of horizontal strips of flat metal, designed to prevent the direct rays of the sun from piercing the screen. The design presents a more difficult finishing problem than conventional screen.

At first glance the obvious solution to the problem of increasing production was to build a new building and install horizontal rollers to carry the screen through the various finishing processes. Was there any other method that would do the job without waiting for a new building to be built?

Sure enough, a solution did develop. "Turn it on end," said someone. "We can use an overhead trolley conveyor if we can find a way to hold the screen on it." So the engineers turned the screen on end.

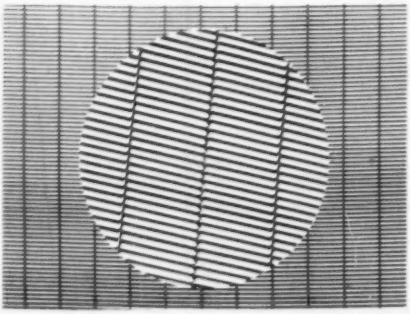

Fig. 1—Closeup: "Koolshade" louvered screen.

Requirements of the system were to paint and bake steel or brass screen already phosphatized. Obviously, the screen must not be damaged in handling. The system must be flexible to handle varying production loads occasioned by the intermittent production of the weaving room.

The system receives rolls of screen in a vertical position. They have already been phosphatized in a separate semi-automatic dip system in which rolls are placed vertically on a transfer beam which automatically raises, lowers and indexes the loads through a series of tanks (Fig. 2). Dwell time in the tanks can be varied by means of automatic timers.

After phosphatizing, the screen rolls are placed in an automatic unreeling loader (Fig. 3). The unit is adjustable vertically for varying widths of screen. It is driven by a device that has clutch and retarding devices that maintain a constant tension on the screen. This loader automatically unreels the screen from its spools and places it in position to be picked up by an overhead trolley conveyor.

The Webb 3-inch Overhead Trolley Conveyor used in this application has trolleys and special hooks spaced on 12-inch centers. Hooks are spring-loaded and are designed to pick up only the top ½ inch of screen. As hooks approach the loader, a bayonet cam opens the prongs of the hook. When in proper position, the hooks snap shut, grasping the screen (Fig. 3).

The overhead trolley conveyor transports screen in this manner through an electrostatic painting installation and then into a 400-deg. F. drying oven. The conveyor makes several passes through the oven. One of the big reasons for adoption of the overhead conveyor was that this oven was available and was suited for an overhead trolley-type conveyor.

After sufficient drying time, the conveyor emerges from the oven (Fig. 4) and takes the screen through a cooling

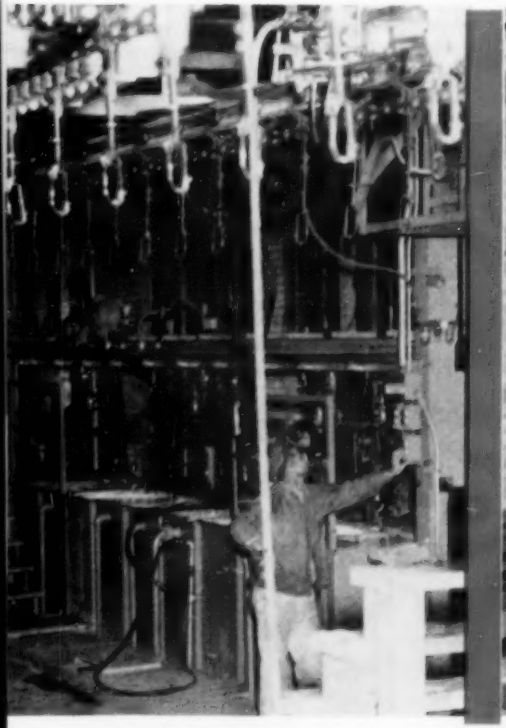

Fig. 2—Rolls of screen are phosphatized in these tanks, using a semi-automatic dip system.

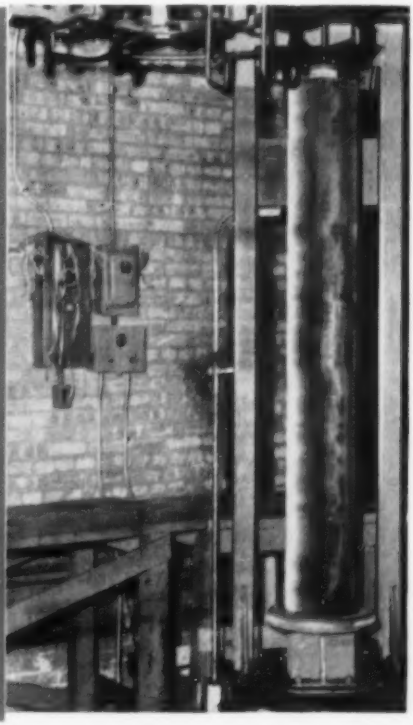

Fig. 3—Automatic mechanism for unreeling screen from spool, transferring it to conveyor.

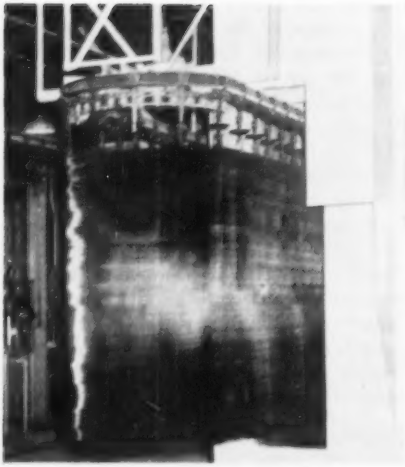

Fig. 4—Painted screen emerging from baking oven. Note how it conforms to conveyor path.

zone. This method of handling successfully carries the screen around turns without distortion or damage to the screen.

The conveyor finally delivers the 100-foot lengths of screen to the automatic reeling unloader (Fig. 5). This unit, like the loader, is semi-automatic and is adjustable vertically. It is driven by means of a mechanism which rotates the spool reeling in the screen and at the same time maintains uniform tension on the screen. Concurrently, the overhead conveyor is feeding the screen to the unloader. As the screen approaches the unloader, a bayonet cam opens the hooks and releases the screen (Fig. 6).

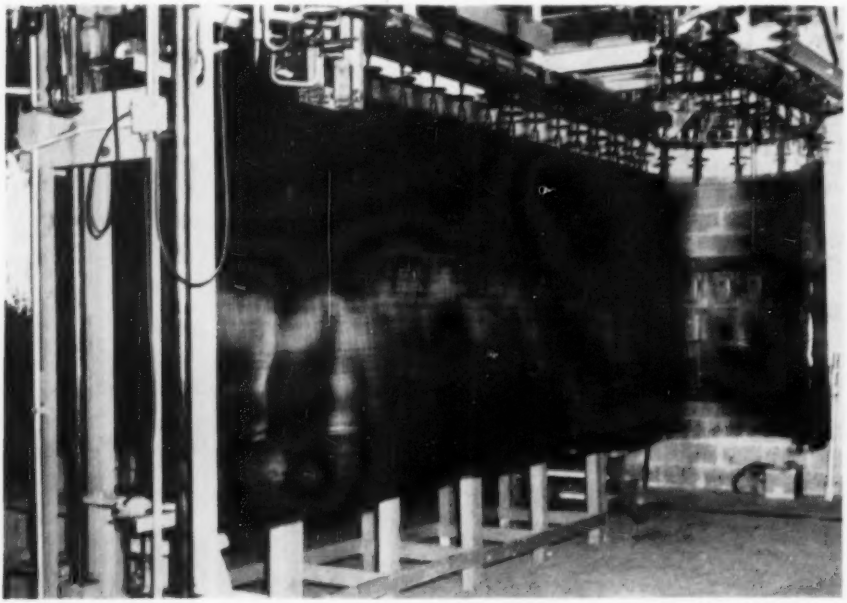

Fig. 5—The semi-automatic conveyor unloading mechanism reels the painted screen from the Webb conveyor onto a spool. End of a 100-foot length of screen can be seen on the right.

For more data on advertisement on opposite page circle 196 on Reader Service Card

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at the finish line...

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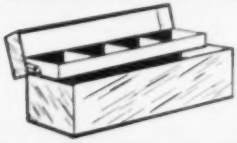

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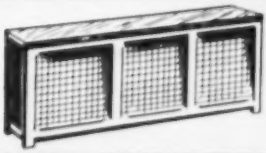

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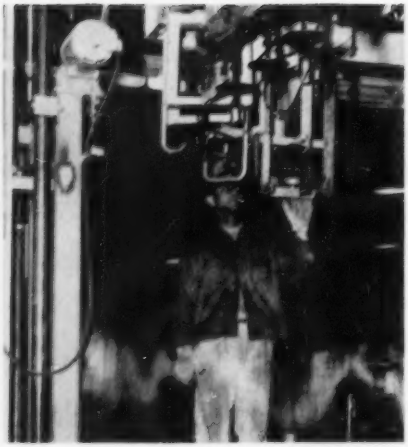


Fig. 6—Conveyor hooks are releasing screen to the unloading mechanism and returning empty. (Photos courtesy Jervis B. Webb Co.)

The screen has now been phosphatized, painted, baked, cooled and returned to the spool.

The system can accommodate various widths of screen and handles intermittent production smoothly. The installation permits Ingersoll to use an existing idle drying oven. Ingenuity in this instance resulted in a finishing system that is both successful and unusual.

For more data circle 1 on Reader Service Card

★ ★ ★

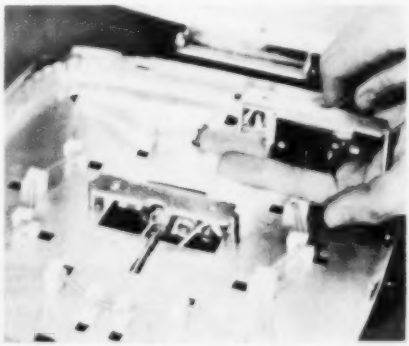
Silicone Paint Improves Appliance Performance

Certainly a black surface absorbs more light than a white one, but does it absorb more heat? The answer, according to A. D. Smith* of Westinghouse: "not necessarily. In fact, it may absorb less."

"It is the chemical and physical nature of a surface that determines its heat absorption value," Mr. Smith points out, "not its color. Take frost, for example. Visibly white and a good spectral reflector, it absorbs 98.6 per cent of all incoming radiation in the infra-red range for one of the highest heat-absorption values known."

A thorough understanding of this phenomenon is extremely useful in the design of electrical appliances. Such otherwise mysterious problems as high table-top temperature, extreme power requirements, and inaccurate thermostats can often be solved by changing one of the materials subject to heat; or, even more simply, by coating it with a finish of the proper absorption value.

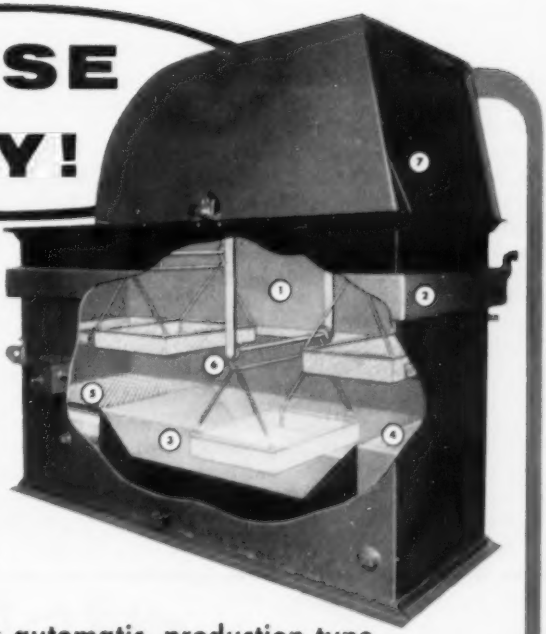
One of the most effective finishes available, according to Mr. Smith, is a mica-pigmented coating based on Dow Corning silicone resins. Although almost colorless, it has an absorption rating of 96.5 per cent. Thin and flexible enough to withstand heat expansion and contraction inside an appliance, this silicone based finish retains



The silicone-mica finish on the thermostat and baffle of this waffle baker helped increase the unit's efficiency by reducing heat and power requirements. (Photo courtesy Dow Corning Corporation, Midland, Michigan.)

*Conference Paper, AIEE Domestic Appliance Conference.

LEASE or BUY!



PHILLIPS ROTOMATIC VAPOR DEGREASER WITH LIQUID DIP

Combination of automatic time cycle, liquid solvent dip, and vapor degreasing — all in one unit. Cutaway view illustrates construction and operation: 1—Vapor degreasing area; 2—Condensing water jacket; 3—Cool rinse washes off chips and insolubles; 4—Reso-Kleen sump supplies clean solvent to rinse sump; 5—Boiling sump generates vapor; 6—Rotating reel for baskets, with timed cleaning cycle; 7—Loading and unloading point. Capacities from 1800 to 4000 pounds per hour.

NOW! This automatic, production type degreaser can be yours on purchase or lease

. . . for less than 15c per operating hour!

Automatic, high production degreasing on purchase or lease — at very low cost! It can be yours for less than 15c per operating hour!*

This degreaser handles a variety of small metal parts . . . Has adjustable control time cycle . . . Has continuous one-man operation . . . Assures complete cleaning and drying in blind holes and recesses. Available with tumblers for parts that tend to nest.

This machine is one of a complete line of Phillips degreasers. Your Phillips representative can help you determine your needs. Call him today — or write, wire or phone direct.

** Figures are for Model 60RM — Capacity 1800 pounds per hour.*

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For more data circle **197** on Reader Service Card

its physical and absorptive values despite prolonged exposure to as high as 500 deg. F., it is stated.

Its effectiveness is evident in a waffle baker in which heat-absorbing interior coatings alone reduced power required from 1,000 to 800 watts and almost halved the preheat and cooking time necessary for proper performance.

Much of the difference in performance was obtained by coating the underside of the aluminum grids with a heat-absorbing cement. The improvement was so large that the baker's thermostat lagged and over-traveled. The thermostat itself was then coated with the silicone-mica finish, and a similarly-finished baffle was installed to cut off radiation from the coils.

Radiation, therefore, was picked up only from the grids and by conduction, resulting in a more sensitive thermostat and a faster and more economical unit. For instance:

	Plain Aluminum Grids	Treated Grids & Thermostat
Wattage	1000	800
Calibration	520 deg. F.	475 deg. F.
Table-top temperature	186 deg. F.	120 deg. F.
Wire-connection temperature	795 deg. F.	414 deg. F.
Waffle time, minutes	7	4½
Preheat time, minutes	6¾	3 1/6

Where heat reflectance rather than absorption is desired, according to Mr. Smith, an aluminum finish based on epoxy resins can be used, simply because reflectance is so high that surface temperature remains low.

the SECRET of
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SPRAYING...
"HOLLOW AIR®" produces the widest, wettest, most uniformly distributed spray pattern obtainable handling synthetic enamels —an exclusive feature of the BLACK ARROW line of paint spray equipment.
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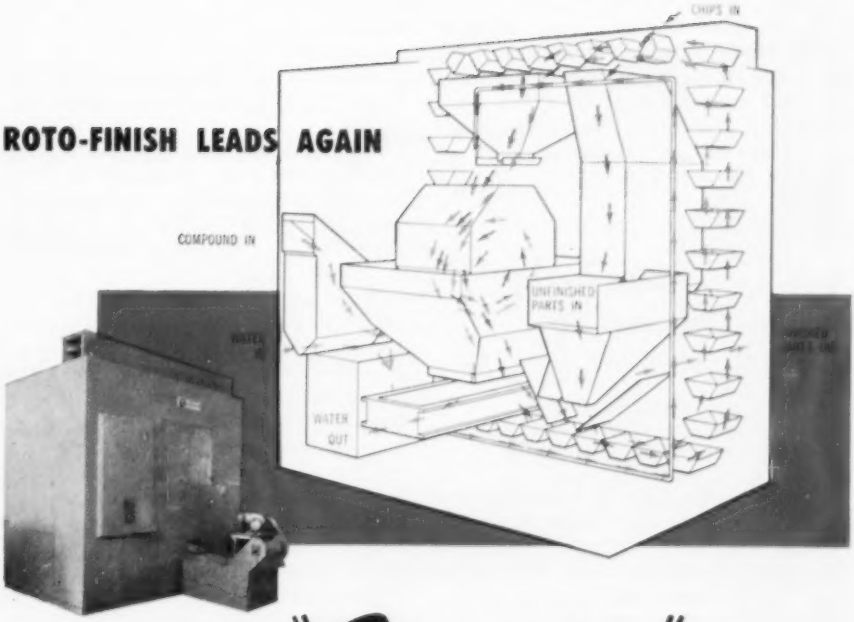
Manufacturers of Precision Built Paint Spray Equipment

ROTO-FINISH LEADS AGAIN



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- Provides continuous operation
- Assures uniformity of finish
- Low cost operation — high production
- Complete package unit
- Simple to install . . . Electric, water, air and drain connections only.
- Suitable for straight line production.
- Thus, "Rotomation" barrel finishing machine becomes a machine tool.

Roto-Finish COMPANY

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P. O. Box 988 – Phone 3-5578

ORIGINATORS OF THE ROTO-FINISH PROCESS

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While effective "as is," the silicone finish is best dyed or colored black, he says, for psychological effect. Customers will associate a black finish with good heat absorption, even if incorrectly. It also eases visual inspection.

For more data circle 2 on Reader Service Card

★ ★ ★

Versatile Plastisols Resist Corrosion, Abrasion

By FRANK GOODE
Paterson Rubber Company
Paterson, New Jersey

Paterson Rubber Company has been in the coating business for many years. The company applies coatings to parts such as impellers for marine centrifugal pumps, agitators for use in mixing vats of chemicals, and wire racks for use in electroplating. Large and small enterprises send a variety of products to Paterson Rubber for protection against severe corrosion and abrasion.

About two years ago, Paterson Rubber decided to try plastisols on these products. Plastisols are dispersions of finely powdered vinyl resins in liquid plasticizers, supplied as liquids or pastes.

With plastisols, parts can be dip-coated in one or two dips or sprayed. Thicknesses of ¼ inch from one dip or 30 mils from one spray application can be obtained.

Three questions had to be answered by applicators at Paterson Rubber who investigated the new material. Would a plastisol adhere to nonferrous as well as ferrous metals? Would the resulting coats be of consistent quality? Would performance be otherwise satisfactory? Each of these questions was soon answered to the sat-

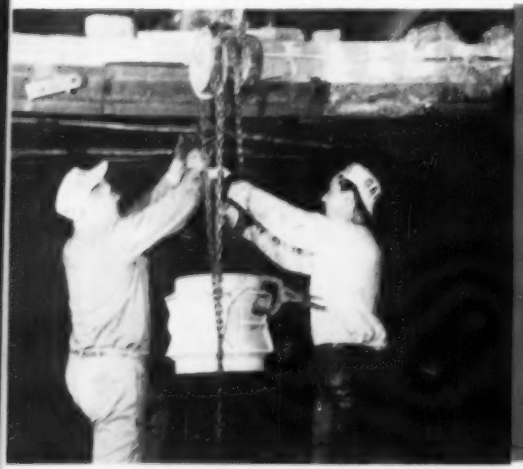
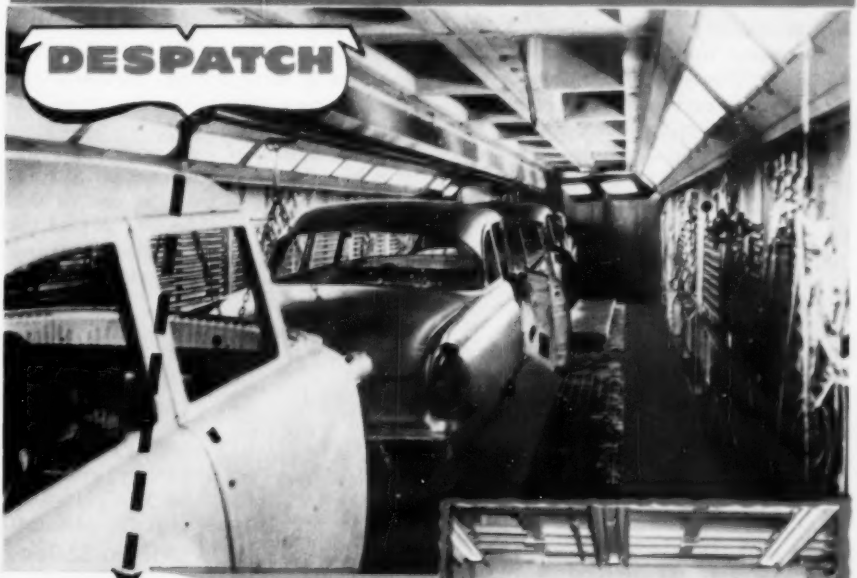


Fig. 1—Bronze impeller for marine centrifugal pump is removed from the oven after primer is baked on. From here it goes to the plastisol dip tank, to be coated with plastisol.

Fig. 2—Hot impeller for marine centrifugal pump is dipped in Unichrome 218X plastisol at Paterson Rubber Co., Paterson, N. J. Impeller stays in dip tank about 10 minutes.

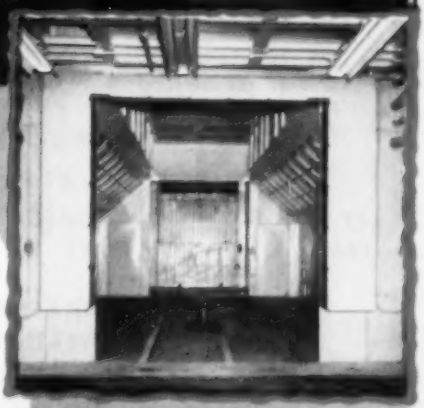
Developing New Paint Spray Technique



Down Draft Spray Booth Improves Finish Spray

The ceaseless search for better methods of paint application to metal products is continually improving surface coverage, finish quality and reducing application time in Despatch built spray booths. This new down draft technique is being observed in one of the leading automobile plants. Let us supply you production data on this and many other spray booth systems to fit your production requirement.

Write today for Bulletin 51C for description of available spray systems



Interior view of Despatch down draft booth showing down draft air flow, also walk area for worker and convenient positions of spray hose.

Minneapolis Office: 619 S.E. 8th St.
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DESPATCH OVEN COMPANY

PIONEERS IN ENGINEERING HEAT APPLICATIONS FOR INDUSTRY

For more data circle 200 on Reader Service Card

isfaction of Paterson Rubber, the customers, and the plastisol formulator—Metal & Thermit Corporation.

Coating Bronze Impellers

By coating bronze impellers for marine centrifugal pumps with plastisols Paterson Rubber has improved the life of the impeller coating.

These impellers are parts of centrifugal pumps located in engine rooms of ships. Their main function is to pump bilge (salt) water.

Usually the first step in applying plastisol is sandblasting. This smooths the impeller surface and improves adherence of the plastisol.

Next, a primer coat is applied and the impeller baked for about 20 minutes at 360 deg. F. At the end of this baking period the impeller is transferred by monorail chain hoist to the dipping area, where it is dipped while hot in Unichrome 218X plastisol.

The impeller usually remains in the dipping tank for about 10 minutes, building up a ⅛-inch layer of plastisol. Then it is transferred back to the oven to bake for about 1½ hours at 360 deg. F.

Plastisols are also being used in coating agitators for mixing slurries of abrasive and corrosive organic crystals.

When Paterson suggested plastisols for coating agitators tests were developed to evaluate the material in this application.

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the new, all new CIRCO degreaser

Completely redesigned for performance and economy, the revolutionary new Circo degreaser will save you 30% or more on solvents, 40% on maintenance *and will last twice as long*. Over 208 standard models in numerous corrosion-resistant combinations are available to meet your every need. Advanced design for long life and dependability, operating advantages never before realized, and a nation-wide engineering field service combine to make Circo vapor, solvent-vapor-solvent, vapor-spray and ultrasonic quality degreasers the economical answer to every mass production or small shop requirement.

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Bulletin OP2 on solvent degreasers
Bulletin UC1 on ultrasonic equipment
Bulletin 521 on metal washing equipment

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In the first test, Paterson furnished a small Unichrome plastisol patch. It was carefully weighed, then attached to an agitator in service. After four months, the patch was removed and reweighed. Absolutely no weight was lost; none of the plastisol had been worn away.

The first test proving successful, Paterson next determined the effect of full-scale operation by coating an entire agitator with plastisol. After eight months of mixing the tough, abrasive slurry, the plastisol coat was still in good condition.

Highly pleased with the results of the tests, the customer ordered plastisol coats on all remaining agitators —and on covers and drain plugs for the tanks containing the slurry, as well.

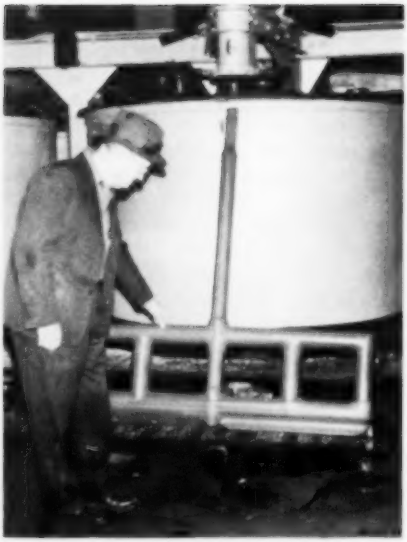

Fig. 3—Typical of the many products coated with plastisol to improve corrosion and abrasion resistance is this agitator for mixing chemical slurries. (Photos courtesy Metal & Thermit Corporation, Rahway, New Jersey)

Other Applications

Paterson has coated plastisols on such diverse objects as automatic switches for an electronics firm (to utilize electrical insulating properties of the plastisol), work-holding baskets for an aircraft manufacturer (to resist abrasion), wire racks for a surgical supply firm (to resist corrosion and abrasion), electroplating tanks and racks (to combat chemical corrosion), and on parts of fire extinguishers (to obtain corrosion protection).

For more data circle **3** on Reader Service Card

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For further information on any product mentioned in this issue of PRODUCTS FINISHING use Reader Service Cards inside front cover.

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For cleaning metal, wood and plastic surfaces before painting. Order today through your supplier.

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Standard of the Finishing Industry Since 1934
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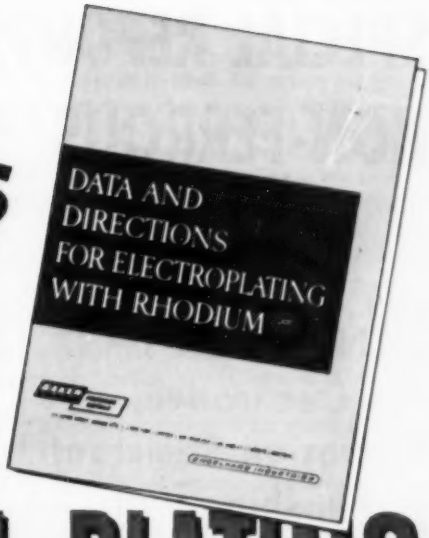
new, up-to-date, more complete handbook on



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For more data circle **204** on Reader Service Card

SPECIAL REPORTS ON FINISHING NON-FERROUS METALS

NUMBER I—
Decorative, Corrosion-Resistant Finishing with Iridite

Chromate conversion coatings are well known and accepted throughout industry as an economical means of providing corrosion protection, a decorative finish or a good paint base for non-ferrous metals. However, continued developments are so rapid and widespread that many manufacturers may not be completely aware of the breadth of application of this type of finish. Hence, this digest of current information; to bring you up to date on the many ways in which you can combine salable appearance with durability in one finish at a competitive price advantage. Report II on paint base, corrosion-resistant finishes and Report III on chemically polished, corrosion-resistant finishes are available on request.

First, as a basis for this discussion, a "decorative" finish is considered as any chromate film that is used as a final finish in itself. It may be truly decorative in that its sole purpose is to enhance the beauty of the product. For example, a bright chrome-like finish or a pleasing bronze appearance are among the many effects that can be obtained. It may be functionally decorative in that it reduces reflectivity for camouflage purposes or provides a means of color-coding parts. But, in all cases, the Iridite films protect the metal against corrosive attack.

Iridite finishes are now available for all commercial forms of the more commonly used non-ferrous metals, including zinc, cadmium, aluminum, magnesium, silver, copper, brass and bronze. These films can produce a wide variety of pleasing appearances. The basic colors of the Iridite coatings are grouped below by metals.

ZINC and CADMIUM: Metallic bright, light iridescent, iridescent yellow, bronze, olive drab.

COPPER, BRASS, BRONZE: Metallic bright, yellow.

ALUMINUM ALLOYS: Clear, iridescent yellow, brown.

MAGNESIUM ALLOYS: Metallic bright, iridescent yellow-red, brown.

SILVER: Metallic bright.

In addition, many films can be modified by bleaching or by dyeing. Among the dye colors available are various shades of red, yellow, green, blue or black.

ADV

WHAT IS IRIDITE®

Briefly, Iridite is the tradename for a specialized line of chromate conversion finishes. They are generally applied by dip, some by brush or spray, at or near room temperature, with automatic equipment or manual finishing facilities. During application, a chemical reaction occurs that produces a thin (.00002" max.) gel-like, complex chromate film of a non-porous nature on the surface of the metal. This film is an integral part of the metal itself, thus cannot flake, chip or peel. No special equipment, exhaust systems or specially trained personnel are required.

Depending upon the metal and the Iridite used, corrosion resistance of clear and bright films ranges from mild passivity to as high as 500 hours in salt-spray; on heavier dark films, salt-spray resistance ranges from approx. 100 to 1000 hours.

It is this combination of decorative and corrosion resistant properties that accounts for the widening use of Iridite finishes.

For example, Iridites #4-73 and #4-75 (Cast-Zinc-Brite) make possible for the first time, a combination of lustrous chemical polishing of the as-cast surface of zinc die castings and good resistance to corrosion. Further, in many cases, sizeable savings in the cost of buffing and electroplating are realized.

On many steel parts, a simple system of zinc or cadmium plate and bright Iridite is used instead of more costly electroplated finishes to provide a bright, decorative and protective finish with tremendous savings in material, equipment and labor.

In finishing aluminum, where corrosion resistance or paint adherence is the prime consideration, the aircraft industry has all but abandoned the anodizing process in favor of recently developed chromate conversion coatings, among them Iridite #14 and #14-2 (Al-Coat). These formulations and their method of application can be varied to retain the original metallic appearance while providing acceptable corrosion resistance, or to produce a fully colored brown finish that offers exceptional corrosion protection. Again, time and manpower savings are astounding—one company saved at least $15,000 a year on maintenance of racks alone and another $40,000 on materials and labor in only nine months. In addition, of course, hundreds of thousands of dollars are saved by eliminating the need for expenditures for generators, heating equipment and racks.

Iridites are widely approved under both Armed Services and industrial specifications because of performance, low cost and savings of materials and equipment.

In planning or designing, you should consider the many other characteristics of Iridite finishes which may enter into the specific problem. In addition to having decorative and protective functions, these chromate coatings form an excellent base for organic finishes and bonding compounds. They have low electrical resistance. Some can be soldered and welded. The film itself does not affect the dimensional stability of close tolerance parts.

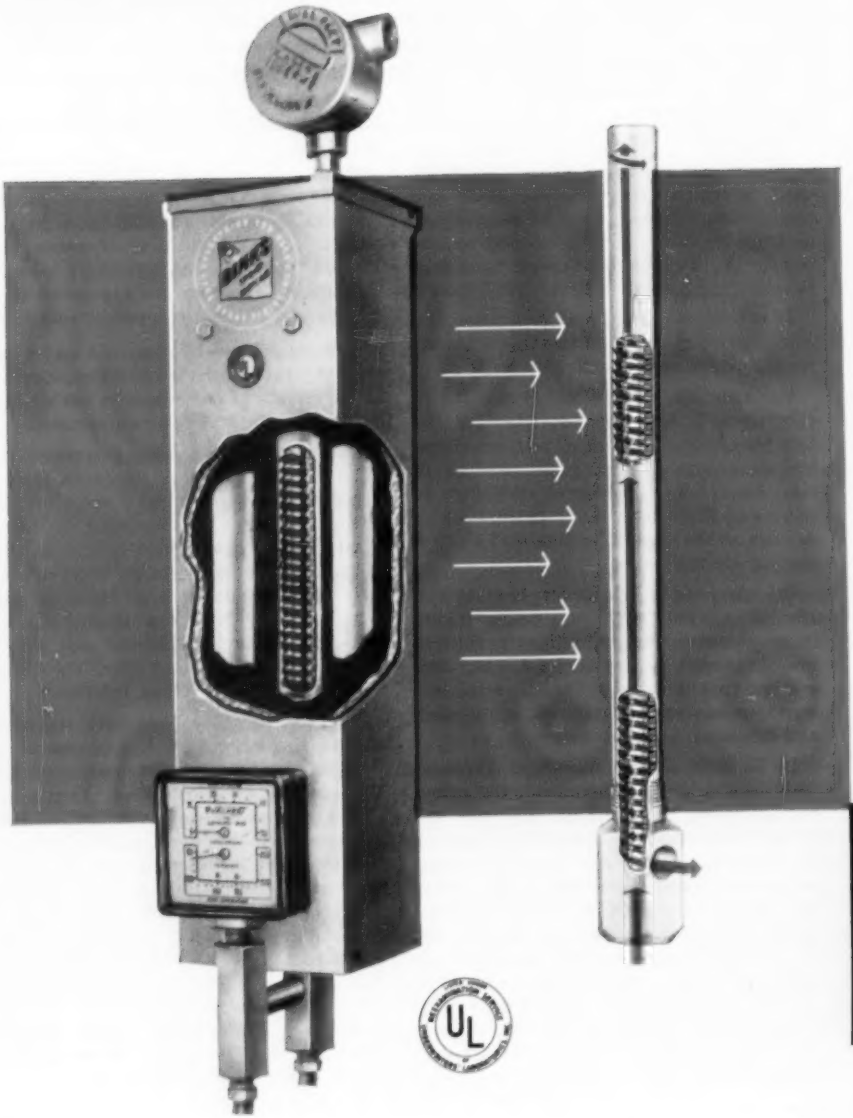
You can see then, that with the many factors to be considered, selection of the Iridite best suited to your product requires the services of a specialist. That's why Allied maintains a staff of competent Field Engineers—to help you select the Iridite to make your installation most efficient in improving the quality of your product. You'll find your Allied Field Engineer listed under "Plating Supplies" in your classified telephone book. Or, write direct and tell us your problem. Complete literature and data, as well as sample part processing, is available. Allied Research Products, Inc., 4004-06 E. Monument Street, Baltimore 5, Maryland.

For more data circle 205 on Reader Service Card

ADV.

What's New in paint heaters

Binks new DUALHEET



paint heater has removable paint tract

Only Binks DUALHEET paint heaters incorporate the following features...features which insure easy maintenance and long, dependable operating life.

Lower maintenance costs
The paint tract is a heated chamber within the unit where the temperature of the paint is raised to 160°-180°F. It has no parts that are affected by the intense heat...a common cause of many paint heater failures. Easy removal of the paint tract for periodic inspection and cleaning saves both time and money. Should major servicing ever be required, a new, low-cost paint tract can be installed in less than 5 minutes.

Lower operating costs
Heating finishes with a Binks DUALHEET paint heater reduces need for thinners. With higher solids content, one pass of the spray gun applies greater film thickness with less overspray and provides greater coverage per gallon. Less atomizing air pressure is needed. Fewer rejects... sags and runs are virtually eliminated.

Simple installation
A Binks DUALHEET paint heater fits easily into existing cold spray process systems either as a portable or stationary unit. Electrically heated, it requires no special auxiliary heating attachments or space. Available in two production-rated capacities–8 or 15 gallons per hour. May be used with pressure tanks, material handling pumps or paint circulating systems.

Simple operation
Operators will experience no difficulty in shifting from cold to hot spray process.

For complete information ask your local industrial distributor for Binks DUALHEET Bulletin or write direct to the address below.

Ask about our spray painting school
Open to all...NO TUITION...covers all phases

662

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For more data circle 206 on Reader Service Card

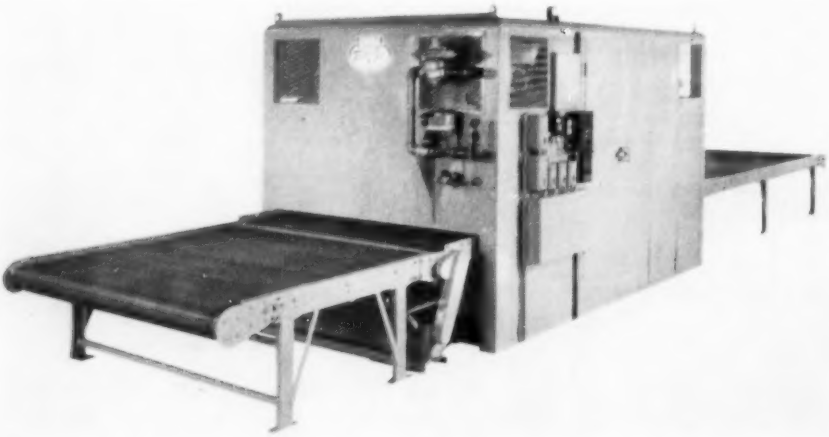
New Equipment, Materials, Processes

› Cleaning
› Polishing
› Plating
› Paint Finishing

Screen Process Dryer

General Research and Supply Company, 572 S. Division Ave., Grand Rapids 3, Michigan, has announced the addition of four models of the General Thermo-Jet Dryer to their line of screen process printing equipment. General now has a total of six standard Thermo-Jet Units; the two basic sizes of 26 by 34 inches and 34 by 46 inches; and the four models which are available with either 6-foot or 12-foot drying chambers and built-in widths of 34, 48, 56 and 76 inches. On special order the length of the drying chamber can be manufactured to meet specific requirements of the user.

The Thermo-Jet Dryer Units are designed for large production runs of a wide variety of screen process work, where the solvents used dry by evaporation. Essentially the system consists of blowing large quantities of warm air at high velocity through a per-



General Research Thermo-Jet Screen Process Dryer: now available in six standard sizes

forated plate suspended about one inch above the work, which is carried on a moving conveyor. This produces many tiny jets of warm air which strike the wet ink or coating. The action of the warm air jets not only raises the solvents to a temperature that accelerates evaporation, but also blasts away the rising vapors, thus preventing the formation of a vapor blanket which would retard evaporation.

These gas-fired, thermostatically-controlled units reduce drying time and maintain low sheet temperatures, thereby eliminating distortion, it is stated.

These units can be used independently or the speed of the variable-drive conveyor belt can be synchronized to operate with a printing press coater or other equipment.

For more data circle 4 on Reader Service Card

★ ★ ★

Automatic Load-Unload Mechanism

A machine designed for rapid loading and unloading of metal parts to and from automatic metal finishing machines has been announced by Hanson-

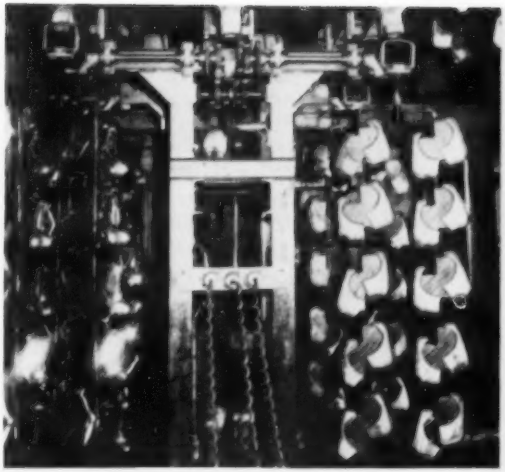


Fig. 2—Load-unload unit at a large auto parts installation. Metal finishing conveyor is in background. Loader has just removed two racks of plated bumper guards from the plating machine and loaded two raw work racks onto the plating machine. At the completion of this load-unload operation, loader will automatically shuttle in reverse, transfer plated parts to monorail, pick up a new load of raw parts and move back to the plating machine.

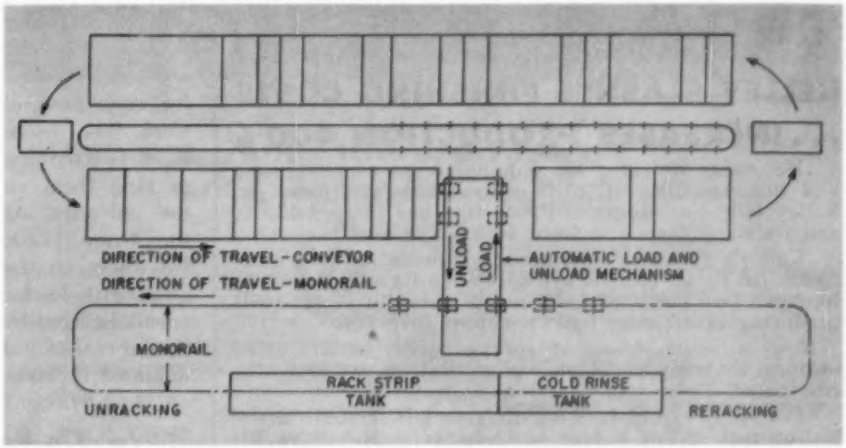


Fig. 1—Drawing shows a typical flow pattern using H-VW-M's automatic load-unload unit.

Van Winkle-Munning Co., Church St., Matawan, N. J.

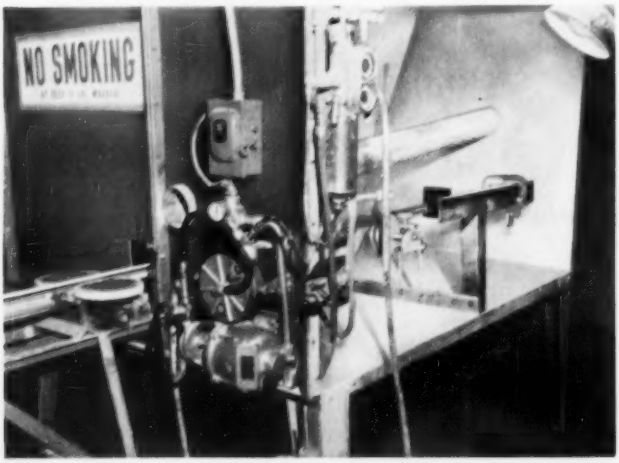
The automatic transfer unit, operating between a metal finishing machine and a monorail conveyor, loads and unloads work racks on the same indexing sequence as the finishing machine. This eliminates manual handling of parts entering or leaving a plating sequence.

The system is particularly valuable at installations where short dwell periods (short load-unload periods) prevail, since the automatic transfer unit keeps pace with the metal finishing cycle. It automatically handles loads too heavy to be handled manually.

The loader is designed to shuttle on a pair of rails between the metal finishing machine and the monorail, with rails either on the floor or in an overhead position. At the top of the loader are two double stations, one for loading and one for unloading. The loader is timed to operate in exact timing sequence with the metal finishing machine and the monorail.

How It Works

After completion of plating operations, the work carrier, positioned properly at the unload station, signals the loader to move in. Lifting cranks, one for each lane of work, then disengage the racks, parking them on the unloader. At the same time, two racks on the adjacent loader are disengaged by similar cranks and mounted in place on the adjacent empty work carrier of the plating machine.



KELLEY SLASHES FINISHING COSTS ...INCREASES PRODUCTION 400%

Hot spray finishing has eliminated one complete coat and one handling of 10-ft. galvanized "Z" forms at Kelley Mfg. Co., Houston. Production has jumped 400%, and finishing costs are down 46%.

Kelley's finishing operation is automatic. Two guns controlled by an electric eye spray the forms with white lacquer. Two coats of cold spray were formerly used, producing insufficient build and poor coverage.

Now, a *single* coat hot sprayed gives better build, uniform coverage and higher gloss. Rejects are virtually eliminated. There was no change in material.

Hot spray can make a big difference in YOUR finishing operation. For a free booklet, "Why Hot Spray?", write the Spee-Flo Company, Dept. P.F. 21, 720 Polk, Houston, Texas.

For more data circle 207 on Reader Service Card

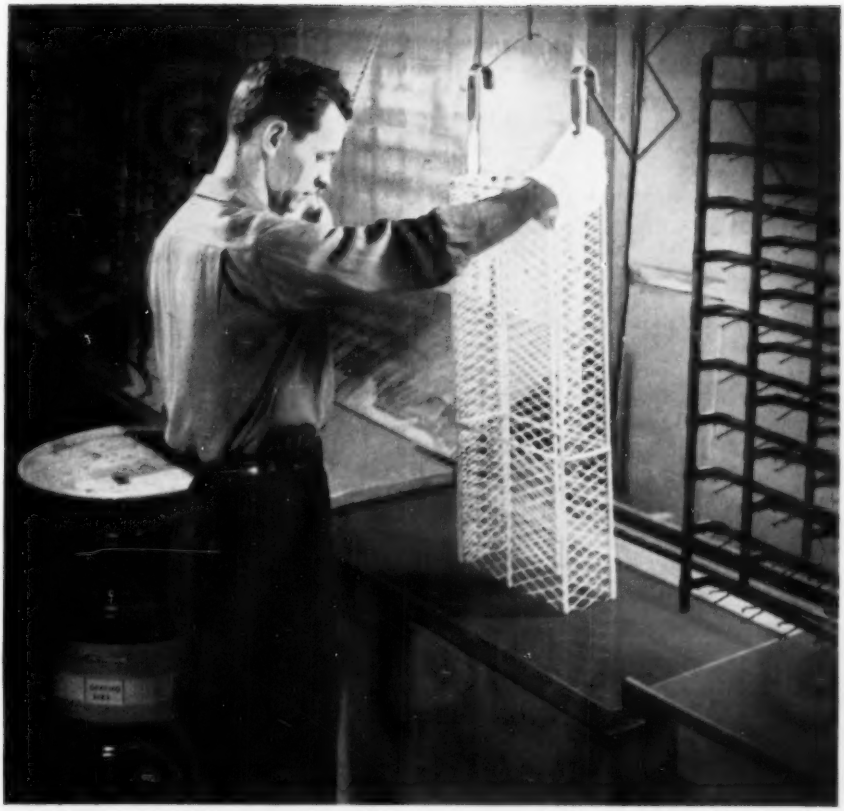


Photo courtesy Mitchell-Bate Co., Waterbury, Conn.

What's being lowered here?

Costs! With Unichrome Coating 218X, of course!

SAVINGS START soon as users lower racks and baskets into Coating 218X. This approved vinyl plastisol provides insulation that lasts phenomenally long. It withstands toughest plating and cleaning cycles, even vapor degreasing cycles. It won't chip, tear, blister . . . won't contaminate baths. Coast to coast, platers know how it cuts maintenance to the bone, saves most time and money in the end.

If you want a nearby, experienced firm specializing in plastisol application to do the job for you, we'll gladly supply names.

UNICHROME

METAL & THERMIT
CORPORATION
General Offices: Rahway, New Jersey

For more data circle 208 on Reader Service Card

The shuttle then moves on its tracks back to the monorail. The outer lane deposits its racks on the monorail hook, while the inner lane rack parks in a fixed pair of saddles on the unloader framework. The unloader then retracts sufficiently to pick up the second parked rack load. At the same time the monorail moves ahead one hook spacing. This signals the unloader to move ahead a second time and deposit this second load on the monorail. Simultaneously, the loader mechanism is removing two adjacent racks from the monorail.

This system permits use of the conventional flow patterns of work loads on the monorail, with all raw stock moving into position at the plating machine, all finished stock moving away on the same empty hooks of the monorail. There is no mixing of raw and finished stock on alternate hooks of the monorail.

The system aids in synchronizing the unload-load of two plating machines, using a common monorail — where nickel plating is done on one machine and the same rack load chrome plated on another machine, for instance. It also serves where intermediate operations are performed on the monorail, such as degreasing, drying or rack stripping.

All controls for the three conveying elements—monorail, loader and metal finishing machine—are located in a single centralized panel, so that the entire operation can be coordinated.

For more data circle 5 on Reader Service Card

★ ★ ★

Vapor Degreaser

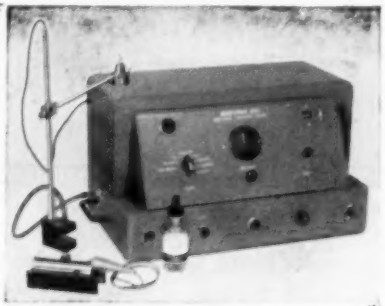
A safety-engineered solvent vapor degreaser designated Model 22 has been introduced by Tect, Inc., Cortland Ave. and Erie St., Dumont, N. J.

Be sure of your

PLATING

THICKNESS

with the



KOCOUR Electronic Thickness Tester

There's no room for guessing plating thickness when you can have accurate readings quickly. The Kocour Electronic Thickness Tester determines the thickness of chromium, silver, tin, cadmium, zinc, brass, copper, nickel, lead, and other plating. Readings are direct . . . accuracy 90-95%. Write for further information . . . no cost, no obligation.

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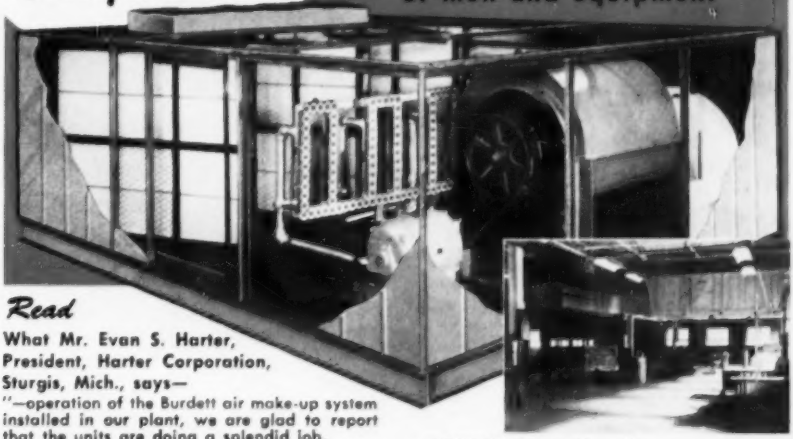
When a BURDETT AIR MAKE-UP SYSTEM will eliminate this problem and increase efficiency of men and equipment



Read

What Mr. Evan S. Harter, President, Harter Corporation, Sturgis, Mich., says—

"—operation of the Burdett air make-up system installed in our plant, we are glad to report that the units are doing a splendid job.

"Prior to the installation of the air make-up unit, our plant was under a considerable vacuum that was a source of an endless amount of trouble. This vacuum was created by the many spray booths that we have in our paint finishing department and also by the exhaust system employed in the grinding and buffing department, as well as other exhaust provisions for welding booths, etc.

"By the installation of these air make-up units we are now able to satisfy air replacement requirements in any portion of our plant without affecting other areas or operations. The reason we chose to install several units of different capacities was so that we could satisfy our exact exhaust requirement regardless of the amount of equipment that was in operation.

"Since the installation of these air make-up units:

1. All exhaust systems are functioning satisfactorily and efficiently.
2. The spray booths and polishing lathes are working more efficiently because of sufficient volume of air in the building.

- *25,000 CFM capacity unit*
- *Automatic temperature control with outside temperature variation from −10° F. to +80° F.*
- *Complete with fans, motors, operating equipment, filters and controls.*

3. The lack of vacuum in the building has made it possible for people to work in comfort and without draft along windows and walls.
4. Doors of the building can be opened and closed by employees or automatic door openers without danger to employees or the necessity of frequent repairs of doors or door frames.
5. We have been able to maintain an even distribution of dampness in the different areas that were previously affected.

"The air make-up units have supplied the proper volume of fresh and heated air to the closely controlled temperature necessary to maintain the operation in each phase of production."

(Signed) Evan S. Harter
President

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BURDETT
MANUFACTURING COMPANY

4916 South Monitor Avenue • Chicago 38, Illinois

Detroit Philadelphia New York Cleveland Dallas

Manufacturers of

COMPLETE FINISHING SYSTEMS — "RADIANT-HEAT SYSTEMS", OVENS, HEATERS, AIR MAKE-UP UNITS, SPRAY BOOTHS AND WASHERS

For more data circle 210 on Reader Service Card

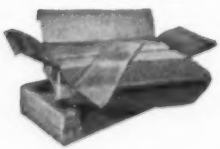
The unit can be operated with Vythene, trichlorethylene or perchlorethylene solvents by adjusting thermostatic controls. The body of the degreaser is coated with a black, solvent-resistant coating on the outside to reduce heat loss. The condenser is stainless steel.

Additional safety is provided by two thermostats. One prevents solvent breakdown due to thermal decomposition and shuts off the machine when it requires draining. This thermostat also prevents burn-out of the immersion-type heating elements if the solvent level should fall too low. The other thermostat, mounted above the condensing coil, prevents the solvent vapor from escaping into the room if the water supply fails.

Tect Model 22 Solvent Vapor Degreaser

For Dust Free Finishes!
BOND TACK CLOTH

IN ROLLS
Cut off any size piece to use as needed.



IN BULK
Cut and folded. Ready to use.

STAYS SOFT AND TACKY — A SPECK-FREE FINISH EVERY TIME

Now Available in Rolls or Cut Bulk—White or Gold
in Three Different Types of Cloth

Get your Tack Cloth packed just the way it's easiest for you to use . . . either in 150 yard rolls of 36" wide cloth or in handy cartons . . . 100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will stay SOFT and TACKY until the very last bit is used up!

The Cut Bulk size is 18" x 36" . . . folded to 4½" x 18" for ease of handling. ALL BOND TACK CLOTH is *Spontaneous Combustion Proof, Lint-Free* and *Wax-Free*. Gives a sparkling speck-free Finish *every time*. Clean and sanitary. No waste.

TRY THEM and COMPARE RESULTS. Samples Gladly Sent Upon Request.

BOND CHEMICAL PRODUCTS CO.
"The Tacky Wiper Specialists"
2639 N. CLYBOURN AVE. CHICAGO 14, ILLINOIS

ALSO INDIVIDUALLY PACKED IN GLASSINE ENVELOPES —144 to the Carton

A WARRANTY OF SATISFACTION IN EVERY CARTON

For more data circle 211 on Reader Service Card

WE DON'T STOP WITH THE DELIVERY OF A CHEMICAL—
we put it to work and keep it working effectively

The chemical treatment of metals and metal parts—to prepare them for further processing, to protect them, to beautify them — has grown from a haphazard operation to a highly technical one. Supplying the chemical ingredients is a relatively simple job. Putting them to work and keeping them working effectively in your plant demands the skill of an experienced organization. We have that organization.

We supply not only the metal-treating chemicals, but also—free of charge —the technical and engineering service to keep them working at top efficiency. We furnish assistance in developing and installing the process, we maintain continuing inspection of the process and equipment if you so desire, we check samples of the processed metals in our Quality Control Laboratories—all these are part of ACP service at your command.

That's why we say, "We don't stop with the delivery of a chemical—we put it to work and keep it working effectively." And we have been doing this for over 40 years. Write for a booklet telling about ACP—its products and services.

AMERICAN CHEMICAL PAINT COMPANY, Ambler 14, Pa.

CHEMICALS ACP PROCESSES

DETROIT, MICH. · ST. JOSEPH, MO. · NILES, CALIF. · WINDSOR, ONT.

For more data circle 212 on Reader Service Card

Model 22 requires approximately 13 gallons of solvent and has a capacity of 350 pounds of metal per hour.

For more data circle 6 on Reader Service Card

★ ★ ★

Bright Bronze

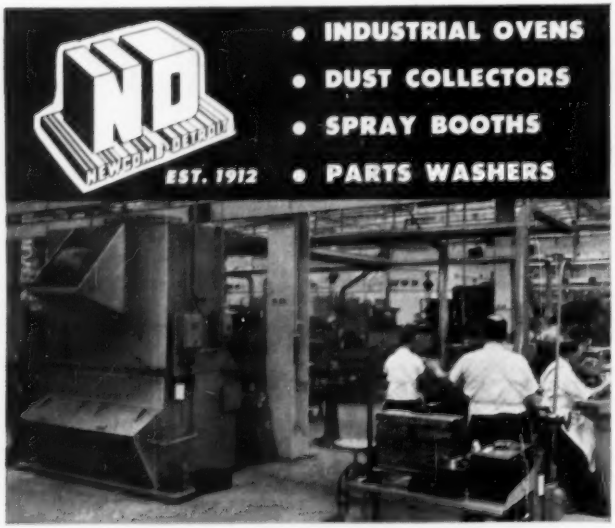
A bright bronze decorative plate of about 90 per cent copper and 10 per cent tin has been announced by Battelle Development Corporation, 505 King Ave., Columbus, Ohio. It is called Bright Lustralite 10, to distinguish it from regular Lustralite 10, which is not so bright and is used in engineering applications.

Bright Lustralite 10 can be used instead of copper and/or bright-nickel plate to protect steel and zinc die castings from corrosion. It can be plated directly with chromium, by using the conventional bath for chromium plating, or is directly plated with bright nickel and chromium without the necessity for buffing.

The plate is said to be mirror-like. For color plating the true red-bronze appearance can be preserved by lacquering. A bright golden color variation can be produced by changing the formula to 85 per cent copper and 15% tin.

The Bright Lustralite 10 bath, like the regular Lustralite 10, 20, and 45 baths, has good throwing power, making it useful for uniform plating of complex-shaped parts. Leveling power is said to be good.

The plate is uniform in brightness over a wide current-density range. The plating salts and brightener are stable. Control is



UNI-WASH DUST COLLECTORS

Compact, complete recirculating Water-Type Dust Collectors for industrial processing dusts. Dirt is collected as wet sludge which may be carried away automatically. No moving parts. Extremely efficient for grinding operations. Eliminates danger of explosion from magnesium and aluminum dust. Proven in foundries. Standard Units available.

For Bulletins and Quotations, write to:

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For more data circle 213 on Reader Service Card

For RAPID STOCK REMOVAL

NATIONAL MODEL 400

Orbital Action Sanding

National's Model 400 Orbital Action Sander is made for tough operation on production lines. Properly used, it will cut sanding time as much as 75% . . . reduce operator fatigue . . . and produce a better finish. Over 100,000 Model 400 Sanders are now in operation in industries throughout the world.

NATIONAL SANDERS

National makes a complete line of block sanders with either orbital or straight line action . . . air or electric driven. Write for more information today.

Pioneers in the Manufacture of Orbital Action Sanders

NATIONAL AIR SANDER, INC.
2818 AUBURN ST., ROCKFORD, ILLINOIS

For more data circle 214 on Reader Service Card

ONE STEP REMOVAL

. . . of rust, paint, phosphate coatings and other soils

with

R.&P. STRIPPER No. 27

A simple soak followed by a rinse . . . instead of separate stripping, pickling, neutralizing, and rinsing operations.

R. & P. Stripper No. 27 is a highly concentrated new type alkaline compound . . . soluble in water, non-corrosive to ferrous metals, non-toxic, non-volatile, gives off no obnoxious corrosive fumes.

No. 27 saves plant space, labor, power and time. Eliminates tanks, maintenance, chemical costs.

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Metasurf

CHEMICAL PRODUCTS FOR TREATING METAL SURFACES

CORPORATION

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DETROIT 27, MICHIGAN
BRoadway 3-3880

For more data circle **215** on Reader Service Card

similar to that of a bright copper bath. Cathode efficiency is between 50-70 per cent; anode efficiency between 70 and 90 per cent. Thus, the anodes not only supply the metal plates or the cathodes, but also replace the metal ordinarily lost in dragout.

For more data circle **7** on Reader Service Card

★ ★ ★

Drum Truck

A retracting caster frame gives the recently-announced Morse Drum Cradle Truck No. 55-0 a long, wide wheel base. The frame swings inside the rock-

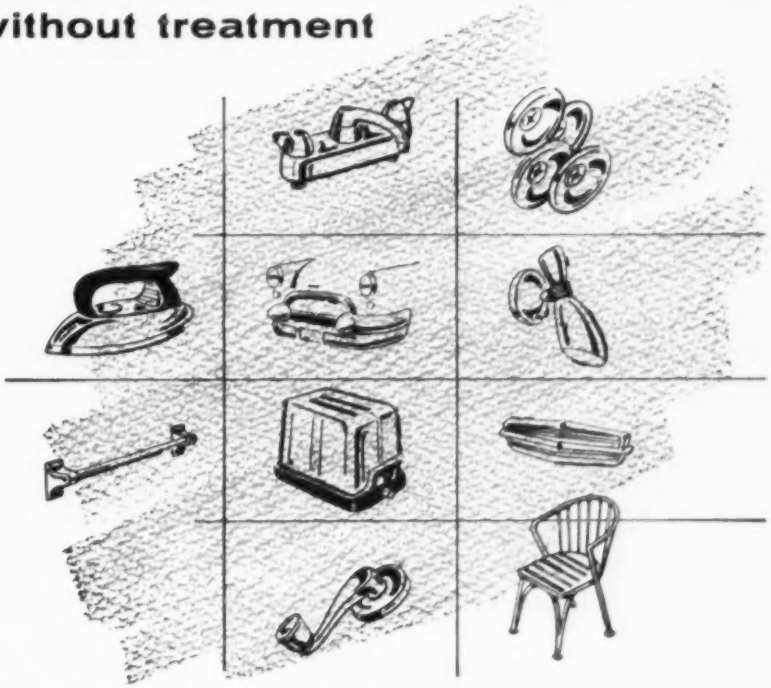
Morse Drum-handling Truck: longer wheelbase

ers while the drum is being rocked up and loaded. It is then thrown forward by pressure on the foot lever, placing the casters well in front of the truck. A safety catch located on the nose piece prevents the drum from slipping while being loaded. The truck has a side opening, for drums which must be placed in a horizontal position to drain from the side.

The drum handling device, a product of Morse Manufacturing Co., Inc., 762

HARSHAW Nubrite

Long, bright nickel plating operation without treatment



Other outstanding advantages are:

BRIGHT OVER WIDE RANGE
from a few amperes/ft.^{2}
to well over 100 amperes/ft.^{2}

HIGH TOLERANCE to common impurities

HIGHLY RECEPTIVE to chrome

EXCELLENT LEVELING

BETTER BRIGHTNESS with thinner deposits.

SIMPLE OPERATION and CONTROL
Plates brightly from 120°F to 155°F.
pH can vary over a wide range.
Liquid addition agents.

REMAINS DUCTILE AFTER LONG OPERATION

For additional information contact the Harshaw office nearest you.

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Chicago 32, Ill. • Cincinnati 13, Ohio • Cleveland 6, Ohio • Houston 11, Tex. • Los Angeles 22, Calif.
Detroit 28, Mich. • Philadelphia 48, Penna. • Pittsburgh 22, Penna. • Hastings-On-Hudson 6, N. Y.

For more data circle **216** on Reader Service Card

W. Manlius St., East Syracuse, N. Y., has four 3-inch diameter wheels supported by cross braces to provide easy rolling of the loaded truck into dispensing position. Four 2½-inch rollers mounted on top rails easily position the bungs of 55 and 110 gallon drums. It is also available with a shorter wheel base to accommodate 30 gallon drums.

For more data circle 8 on Reader Service Card

Buffing Compounds

Schaffner Manufacturing Co., Schaffner Center, Emsworth, Pittsburgh 2, Pa., has announced several buffing compounds for polishing ferrous and non-ferrous metals.

Brown Compound No. B-1 is formulated for use on non-ferrous metals such as copper, brass, aluminum, zinc die castings and bronze. It has a fast buffing action and is used for polishing out tool and grinding marks and surface scratches prior to color buffing.

Tan Compound No. T-2 is designed to be used to produce a high luster on non-ferrous metals such as copper, brass, aluminum and zinc die castings.

Gray Compound No. G-3 contains sharp abrasives and is recommended for polishing out tool and grinding marks and surface scratches on mild steel, stainless and chromium. For this type of polishing, a medium hard, sewed buff is recommended.

White Compound No. W-4 produces a high luster or mirror finish on the harder metals such as stainless steel, carbon steel and chromium plate. It may also be used to produce a mirror

Testing For Causes of Rough Deposits?

9. Run a plating test

By using a testing procedure it will be possible to determine chemical adjustment, addition agent control and bath treatment necessary to return the bath to normal plating. Such testing may also indicate the need for greater filtering capacity or for continuous filtering. If filtering is required on a laboratory scale to obtain satisfactory test results then filtering is required to obtain quality production plating.

Filtering Methods

method for filtering plating baths with a

FREE! Your guide to better plating

This technical article — "The Use of Filters in Electroplating" — written especially for you by Mr. J. B. Mohler, Finishing Consultant is available to you for the asking. Write for your free complimentary copy today.

Write

ALSOP ENGINEERING CORPORATION

1109 Keen St., Milldale, Connecticut

For more data circle 217 on Reader Service Card

How Chromalox Electric Heat answered a paint baking problem

Building a paint-baking oven flexible enough to handle a wide assortment of short run items was the problem faced by this large instrument manufacturer. Air drying proved too slow and the necessary stacking space requirements were prohibitive.

To get this much-needed flexibility, the company built a recirculating type oven large enough to handle a wide range of parts. Into its plenum chamber were installed two Chromalox Electric air blast heaters. With a capacity of 20 kilowatts each, they supply uniform heat throughout the oven, allowing the painted parts to be placed in the oven on shelved trucks for the entire drying period. Temperatures are controlled to individual requirements by a Chromalox thermostat and recording dial.

Results: Production at the required volume. Reduced handling. Considerable savings in floor space, since no storage area is needed. Uniform, high quality finish for a wide variety of parts painted to many different specifications.

This problem — solution — result approach has helped many manufacturers to produce better, faster, at lower cost with the help of electric heat. Chromalox research, design, engineering and modern manufacturing facilities are always available to you. Backed up by nationwide sales-engineering service and the world's largest factory stock of industrial electric heaters.

B-709-B

Edwin L. Wiegand Company

7522 Thomas Boulevard, Pittsburgh 8, Pa.

For more data circle 218 on Reader Service Card

finish on aluminum and brass. A soft wheel should be used for coloring.
For more data circle 9 on Reader Service Card

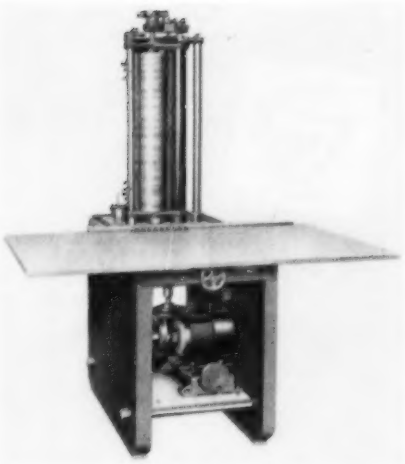
★ ★ ★

Graining Machine

A vertical graining machine, Model V-27, especially designed for manufacturers of radio and TV cabinets and assembled furniture, has been announced by the Hamant Tool Company, Dayton, Ohio.

This machine will wood-grain print on wood, steel or plastic at a speed of 12 to 36 feet per minute.

Featuring simplicity of design and lack of complicated mechanisms, it is said to meet requirements from mouldings 2 inches high to 40-inch cabinets. It will continuously print three sides of a large cabinet in 20 seconds, the manufacturer states.



Hamant Vertical Graining Machine Model V-27

Rhodium
ELECTROPLATING SOLUTIONS
SINCE 1901

Rhodium Plating for jewelry offers the advantages of whiteness, lustre and corrosion resistance . . .

For electrical and other applications: protection from corrosion in air or unusual conditions . . . Particularly recommended for printed circuits and contact surfaces . . .

Can be applied to many surfaces from less than one to one hundred milligrams per square inch . . .

Consult our staff, without obligation, about your specific plating problems.

SIGMUND COHN MFG. CO., INC.
121 SOUTH COLUMBUS AVENUE, MOUNT VERNON, N. Y.

For more data circle 219 on Reader Service Card

If Production Cleaning's Your Job...You'll Want This Cleaning Methods Manual

ANALYZE YOUR CLEANING PROBLEMS

SELECTION OF CHEMICALS

SELECTION OF METHOD

SELECTION OF EQUIPMENT

In these pages you'll find answers to many of your problems concerning the production cleaning of metal parts . . . how to select the proper method, cleaning machine and cleaning compound for any cleaning operation.

This manual analyzes basic cleaning techniques and provides a wealth of information needed to help you cut costs, speed cleaning and improve quality. It covers such subjects as "Dip versus Spray", "The Importance of Mechanical Agitation in Cleaning", "Spray Dip Equipment" and many others. 36 pages with 105 illustrations.

For your free copy of Bulletin 10,000-G write to Magnus, 208 South Avenue, Garwood, N. J.

magnus

INDUSTRIAL DIVISION

MAGNUS CHEMICAL CO., INC.

—a world wide organization specializing in the cleaning and protection of all surfaces

For more data circle **220** on Reader Service Card

New Processes, Materials

The V-27 has a cylinder 9 inches in diameter with a printing roll 6 inches in diameter. Table size is 34 by 54 inches. It requires floor space 5 by 7 feet. A hand wheel beneath the table at front gives automatic multiple adjustment of all parts.

It is powered by a ½ h.p. explosion-proof 220-440 v., 3-phase motor with variable pitch pulley providing a 3 to 1 speed ratio. Oscillating doctor blades provide for quick, easy cleaning.

Free literature on this model and other graining machines will be sent on request to Hamant Tool Co., 3917 E. Second St., Dayton, Ohio.

For more data circle 10 on Reader Service Card

★ ★ ★

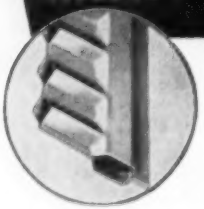
Chromate Sealers

Two chromate sealers for improving appearance and protecting zinc die castings without plating are available from the Conversion Chemical Corporation, 102 E. Main St., Rockville, Connecticut. They are Kenvert No. 50 and Kenvert No. 51. Kenvert No. 50 is formulated to ensure bright, clear finishes, and to protect parts from corrosion. It is resistant to finger-printing and staining. By varying the cycle or concentration of the solution, bright iridescent or golden brown colors can be produced, it is stated.

Where it is desirable to produce a greenish gray to olive drab film on zinc castings, Kenvert No. 51 is recommended. This coating can be produced in a stable bath which is said to be

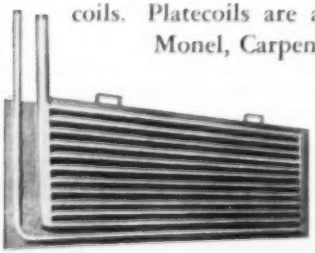
TRANTER PLATECOILS®
For Process Heating and Cooling

NOW AVAILABLE IN MANY NEW METALS



to multiply heat transfer savings

Platecoil design and construction make possible use of corrosion-resistant metals that are too expensive to use in bulky old-fashioned pipe coils. Platecoils are available in Stainless Steel, Monel, Carpenter 20, Hastelloy B, Hastelloy C, Ampco, and Nickel in addition to cold rolled steel.



For more information on Platecoil advantages, send today for Bulletin P50.

PLATECOIL
Division
Tranter Mfg. Inc.
LANSING 4, MICHIGAN

For more data circle 221 on Reader Service Card

"Plus-4" Anodes make better boot molds too!

A copper mold and one of the U. S. Rubber Co. Gaytees produced in it. Mold thicknesses vary from .035" to .090", depending on size and type of boot.

Each electroforming tank can plate 10 molds —uses standard acid-plating solution and 33 "Plus-4" Rolled Anodes, ½" x 8" x 20" —300 amps power input.

IN ELECTROFORMING—as in acid electroplating and electrotyping—ANACONDA "Plus-4" (Phosphorized Copper) Anodes are turning in superior performance records.

The Shoe Hardware Div. of U. S. Rubber Co. electroforms the copper molds used in the production of rubber and plastic rainwear known as Gaytees®. With ordinary anodes, they had been troubled with porosity and "treeing."

Nearly two years ago, they turned to "Plus-4" Anodes and report the following advantages: 1. Extremely smooth plating, without "treeing." 2. Good grain build-up. 3. No porosity. 4. Uniform anode corrosion with consequent scrap reduction. 5. Savings in solution correction due to reduction of sludge and copper build-up. 6. All-round cleaner plate.

You have everything to gain and nothing to lose by setting up one acid-copperplating tank to test "Plus-4" Anodes. Send in the coupon today. 5614

The American Brass Co., Waterbury 20, Conn.
***In Canada*: Anaconda American Brass Ltd., New Toronto, Ont.**

Give me details on how I can get a test supply of "Plus-4" Anodes sufficient to fill one tank.

NAME .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE .... STATE .....

"Plus-4" Anodes

(Phosphorized Copper)

A product of

ANACONDA®

Made by The American Brass Company

For use under Pat. No. 2,689,216

For more data circle 222 on Reader Service Card

uniformly reproducible. It offers maximum corrosion protection and like Kenvert No. 50 it is a good base for paint.
For more data circle 11 on Reader Service Card

★ ★ ★

Belt Grease

Kocour Belt Grease No. 80, a light-bodied all purpose grease compound, to be used for abrasive belt polishing of both ferrous and non-ferrous metals, has been announced by the Kocour Co., 4814 S. St. Louis Ave., Chicago 32, Ill.

This compound will help to prevent the belt or disc from loading, clogging or glazing, and will keep the belt's cutting action better throughout the life of the belt, the manufacturer states.

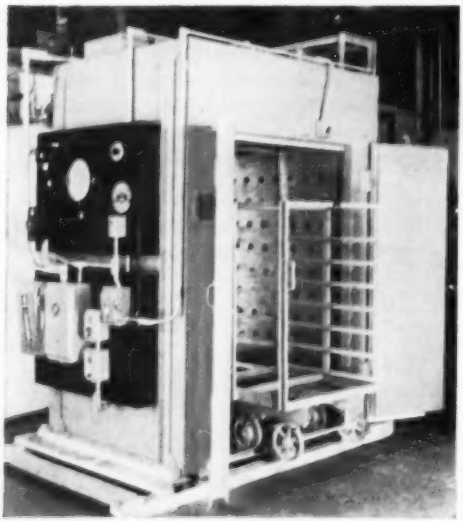
Kocour Belt Grease No. 80 is also said to contribute to cleaner operation of abrasive belts and discs.
For more data circle 12 on Reader Service Card

Silicone Defoamer

A silicone defoamer that is said to be faster acting and more stable, Antifoam B, has been developed by the Dow Corning Corporation, Midland, Mich. Useful in a variety of applications, it is generally effective at concentrations in the range of 3 to 30 parts per million.

Antifoam B: fast dispersion

Instantly dispersible in aqueous systems, Antifoam B may be added "as is" without stirring or agitation, reducing or destroying foam immediately. Because it has extremely small particle size, it also stays in sus-



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for More Uniform—
Faster Drying

- Recirculation Heating
- Electric • Gas • Oil • Steam
- Batch or Conveyor Types
- Safety Control Features
- Save Space and Time
- Reduce Operating Cost

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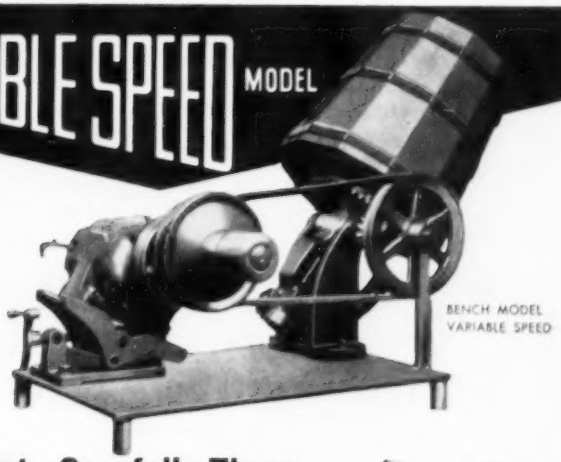
W. S. Rockwell Company • 2906 Eliot St., Fairfield, Conn.

For more data circle 223 on Reader Service Card

INVESTIGATE THIS TIME-SAVING

VARIABLE SPEED MODEL



BENCH MODEL
VARIABLE SPEED

Bench-Type Single Speed

No. 5—Single Speed

Note Carefully These IMPORTANT POINTS

Barrels can be filled with parts or abrasive—*while running.*

Work can be watched — samples removed for inspection — *while running.*

Angle can be changed for best abrasive or polishing action — *while running.*

Barrels can be emptied by tilting to pouring position — *while running.*

Barrels are made in various sizes, shapes, and materials. They are easily replaced.

No. 5—Variable Speed

No. 5A—Single Speed

No. 5A—Variable Speed

No. 6—Single Speed

If You're a Tumbler, Send for This NEW CATALOG

No. 6—Variable Speed

THE HENDERSON BROS. COMPANY

"The Tumbling Barrel People"

134 SOUTH LEONARD STREET
WATERBURY, CONNECTICUT

SINCE 1880 DESIGNERS AND BUILDERS OF TUMBLING BARREL EQUIPMENT

For more data circle 224 on Reader Service Card

pension longer, the manufacturer states. Suitable for use in continuous processing, it will not oil out, plate out, settle or precipitate in most applications, the manufacturer states.

Resistant to heat or cold, Antifoam B is said to retain its effectiveness even after being frozen or boiled. This means that storage problems are reduced.

Further information and free samples are available from Dow Corning Corporation, Midland, Mich.

For more data circle 13 on Reader Service Card

★ ★ ★

White Brass Brightener

Promat Division of Poor & Co., 851 S. Market St., Waukegan, Ill., has introduced an improved white brass brightener. Known as L-116-L, the material is a liquid and is completely soluble in white brass plating solutions.

The product is said to be highly stable in the bath. It has been compounded so as to form no undesirable breakdown products. It is also said to have improved stability in baths operated at high temperatures.

The manufacturer states that this brightener causes less difficulty with respect to forming stresses in codeposited metals, thus improves "chromeability."

Tests have indicated that the color continuity of metals plated from white brass solutions using L-116-L as a brightener is excellent. Uniform color

THE ONLY DIFFERENCE BETWEEN A RUT AND A GRAVE IS THE DIMENSIONS!
ALKALI IKE
AND, our biggest challenge today is to continue to develop for your use to-morrow a thoroughly modern, efficient and economical line of metal finishing products. Our success in the past is the best recommendation for future performance!
A Complete Line of Cleaning Compounds for the Metal Finishing Industry.
Apex ALKALI PRODUCTS CO.
Main and Rector Streets • Philadelphia 27, Pa. • IV 3-3939
SYRACUSE BOSTON DETROIT ATLANTA PITTSBURGH WEST HARTFORD

For more data circle 225 on Reader Service Card

SPEED UP PRODUCTION with DOUBLE-ACTION DRYING

Air-dry as you spin-dry with the new, improved New Holland Model 20 KREIDER CENTRIFUGAL DRYER

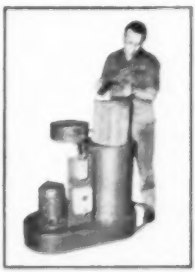
• Now you can *spin-dry* small parts in continuous *fresh air* in as little as 15 seconds.

Double-action drying with peak-efficiency evaporation gives smooth moisture-free surfaces . . . reduces your finishing problems by eliminating the scarring frequently responsible for costly "rejects."

Your operators will be able to boost production, cut costs way down when you install New Holland's easy-to-run Model 20 Kreider Centrifugal Dryer.

SAFER because of Mechanical and Electrical Control Features!

To unlock cover and remove basket, operator must depress foot brake, stop spinner.



Machine cannot start with open cover. Ample clearance allowed for quick loading.

To start spinner, operator must first close cover completely.

SPECIFICATIONS:

1 h. p. motor—220, 440, 550 volts—2- or 3-phase—spins 75-lb. loads at 825 r.p.m. . . . Quiet V-belt drive . . . 30-blade suction turbine draws air through spinner . . . . Arc-welded steel-plate construction . . . Heavy-gauge woven steel mesh basket . . . Weight: 490 lbs. . . . Floor space: Just under 5 sq. ft. . . . Meets N.E.C. specs. **Optional:** J.I.C. Control: Mounted on right, left side or wall. 160° supplementary heat: 2350-watt Chromalox, or steam.

Send for illustrated 4-page folder. Address Dept. F-96, New Holland Machine Company, New Holland, Pa.

NEW HOLLAND MACHINE COMPANY
NEW HOLLAND, PA.

For more data circle 226 on Reader Service Card

deposits can be produced from 10 to 100 a.s.f., the manufacturer states.
For more data circle **14** on Reader Service Card

★ ★ ★

Nylon Conveyor Wheels

Richards-Wilcox Mfg. Co., Materials Handling Div., 276 W. Third St., Aurora, Ill., manufacturer of continuous power overhead conveyors, has announced a chain with nylon wheels for materials handling applications. This combination of nylon wheels and stainless steel bearings offers advantages to users in a variety of industries, the manufacturer states.

Nylon wheels running fully enclosed on steel track are more quiet, it is stated. Where moisture is a problem, stainless steel bearings and nylon wheels

Nylon Conveyor Wheels on steel track: quiet

combine to eliminate bearing corrosion. No lubrication is needed on these bearings the manufacturer states.

The chain is said to be especially advantageous where water or high humidity conditions exist. Nylon wheels and stainless steel bearings are resistant to most common organic solvents, alkalis and most organic acids.
For more data circle **15** on Reader Service Card

★ ★ ★

Oil-Moisture Separator

A production-type separator designed to clean and regulate the flow of air for two spray guns has been introduced by Black Manufacturing Co., Livingston, N. J. All component parts of this gun are made of stainless steel, brass or aluminum, to resist corrosion.

Black corrosion-resistant air filter

Filtering elements are of the permanent type. A drain cock at the bottom of the unit permits drawing off of condensed water and other impurities that have been filtered out. The regulator assembly utilizes a blowout-proof, three-ply laminated rubber diaphragm to provide safer operation.

Inlet fittings are ⅜-inch standard pipe thread, outlet cocks, ¼-inch pipe

For Platers, Silversmiths, Jewelry Mfgrs., Makers of Watches, Clocks and Electronics and other metal finishers.

Supplied in straight or crimped brass, steel, nickel silver or stainless steel wire in sizes .0025 to .006 and in bristle, fibre or Nylon. Special sizes and shapes to order.

Write (Dep't. P) on your letterhead for catalog and price list

DIXON & RIPPEL, INC. Box 116 Saugerties, N. Y.
ESTABLISHED 1856

For more data circle **227** on Reader Service Card

Replace Rochelle Salts in Any Copper Cyanide Solution

with

ARGOL-X

ARGOL-X is so easy . . . so simple to add to plating solutions that once you have tried it you'll never go back to the costly, time consuming addition of Rochelle Salts.

Pour the amazing ARGOL-X liquid into your plating solution . . . stir slightly and watch the performance! Immediately, you'll notice the higher efficiency, the smoother, brighter, denser, more uniform deposits.

Try it! Add 6% by volume at only $2.70 per gallon. Mail or phone your order for immediate delivery.

To Reduce Your Plating Costs

SMOOTHEX, Inc.

10705 BRIGGS RD. • CLEVELAND 11, OHIO • PHONE Winton 1-9060

For more data circle **228** on Reader Service Card

thread. Main line pressure gauge 200 pounds, regulated pressure gauge 100 pounds. Unit capacity: 45 c.f.m. at 100 pounds pressure.

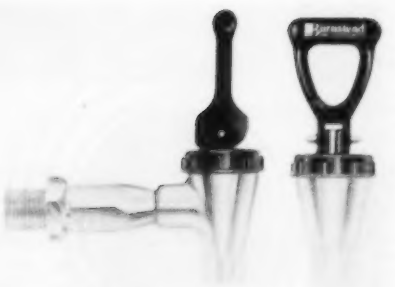
For more data circle **16** on Reader Service Card

★ ★ ★

Distilled Water Faucet

Barnstead Still & Sterilizer Company has announced a tin-lined faucet for distilled water distribution systems in laboratories. The manufacturer states that it will give long service with complete purity protection. The faucet is both self-closing type and non self-closing type depending on which way the handle is thrown. This feature eliminates the problems of leakage, binding, dripping and regrinding.

The faucet is constructed of tin-lined brass with silicon plug and plastic handle. The tin lining is approximately 1/16 inch thick and is permanently bonded to the metal.



Barnstead tin-lined Distilled Water Faucet

Additional information may be obtained by writing the manufacturer, Barnstead Still & Sterilizer Company, 12 Lanesville Terrace, Boston 31, Mass.

For more data circle **17** on Reader Service Card

★ ★ ★

Protective Tape Applicator

A machine designed for mechanical application of pressure sensitive tape, to protect polished metal sheets, has been announced by Minnesota Mining & Mfg. Co., 900 Fauquier St , Minneapolis, Minn.

The machine, made by the Sod-Master Corp., Minneapolis, called the "Tape-Master" applicator — reduces time required to cover 12 foot metal sheets to one minute per side.

The "Tape-Master" consists of two basic units, an applicator carriage which carries, unrolls, applies and cuts the tape, and an applicator table.

Two models of the "Tape-Master" are presently available. One, the Mark IV, applies protective tape in multiple widths up to four feet. The other, the Mark V, applies tape in widths up to five feet. Both models have 12 foot applicator tables.

Floor space needed for the machine is approximately 16 feet by four or five

TUMBLING CHIPS

PROCESSED LIMESTONE HONING CHIPS
are excellent for producing a super fine finish on non-ferrous metals.

PROCESSED RED GRANITE ABRASIVE CHIPS
are exceptionally well suited for developing a fast cut on ferrous metals.

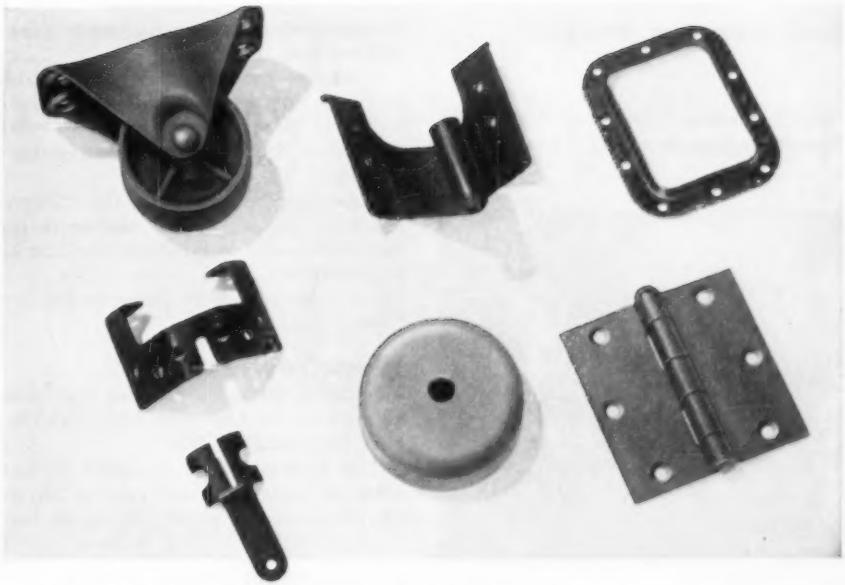
CHIPS IN 16 SIZES

FREE CATALOG AND CHIP SAMPLES FOR COMPARISON.

SAMPLE PARTS PROCESSED
Write or Call
VE 8-2071

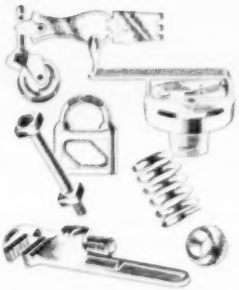
UNIVERSAL TUMBLING SUPPLY CO.
14337 Mansfield Detroit 27, Mich.

For more data circle **229** on Reader Service Card



A manufacturer of metal stampings* writes:

"There are many outfits offering something like Parkerizing, but we want the real thing."



Some typical parts which are protected from rust by treatment with Parco Compound

Parco Compound† (Parkerizing†) is the original rust-resistant phosphate coating for iron and steel. For forty-two years it has protected hundreds of different types of products—from bolts to boats.

There are other products "like" Parkerizing, but none quite so effective, so dependable, so thoroughly tested and proven.

Parkerizing is simple, fast, and costs very little. It can be used on any iron or steel article which can be immersed in the tanks. Since it does not change the dimensions of the treated parts, it is excellent for threaded or close-fitting components. Parts treated with Parco Compound may be finished with stains, waxes, oils or paint.

You, too, should demand "the real thing." Use Parkerizing for rust resistance.

*Name on request. †Parkerizing, Parco—Reg. U.S. Pat. Off.

PARKER RUST PROOF COMPANY
2172 E. MILWAUKEE, DETROIT 11, MICHIGAN

Since 1914 — leader in the field

BONDERITE corrosion resistant paint base · BONDERITE and BONDERLUBE aids in cold forming of metals · PARCO COMPOUND rust resistant · PARCO LUBRITE wear resistant for friction surfaces · TROPICAL heavy duty maintenance paints since 1882

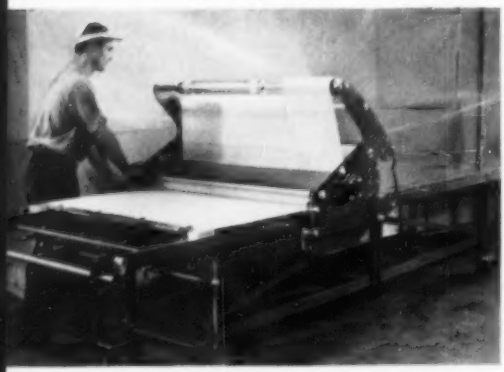
For more data circle 230 on Reader Service Card

feet, depending on the model. While the table is only 12 feet long, rails carrying the applicator carriage project two feet beyond both table ends.

The table, mounted on wheels, can be moved to any location. Floor clamps attached to the wheel mounts are lowered to prevent the table from moving during use.

One man can operate the "Tape-Master." An additional worker is required to assist in handling and stacking unwieldy metal sheets.

For more data circle 18 on Reader Service Card



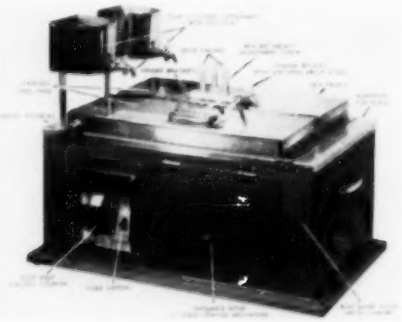
Tape Master Protective Tape Applicator applies pressure-sensitive tape to sheet metal

★ ★ ★

Wear Tester

A heavy-duty wear tester has been announced by Gardner Laboratory, Inc., Bethesda 14, Md.

The instrument is designed to test abrasion resistance and related physical properties of paint, varnishes, lacquers, enamels, waxes and ceramics.



Gardner Laboratory heavy-duty wear tester

Essentially the machine consists of a protruding drive finger that produces a straight-line motion (37-75 oscillations per minute, as desired) by means of a special chain drive mechanism powered by a ¼-h.p. motor; two removable panel pans with outlet petcocks fitted on top of the machine; a vertically-adjustable hinged tandem bracket accommodating a pair of brushes with weighted boxes or other

TECHNIC Soluble GOLD
TECHNIC Soluble RHODIUM

Technic solutions, like Technic advisory service, set the standards for precious metal electroplating.

TECHNIC, INC.
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When you think of finishing & deburring

think of Hammond

70 years building machinery has provided us with a bank of "Know-How." Our business is to share this with you, as we have with hundreds of America's leading manufacturers.

Your finishing problem is one our engineers will study to determine what savings are possible when employing modern Semi-Automatics, Automatics or Automation methods.

Hammond Machinery Builders

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See us at Booth No. 1250 Metal Show, Cleveland—October 8-12

For more data circle 232 on Reader Service Card

accessories as desired; two polished plate glass panels, which allow a 13-inch stroke to be made on their coated test surfaces; a four-digit counter that counts each oscillation; a switch for starting and stopping the machine.

The machine has facilities for running one, two, three or four tests simultaneously on different panels. It is suitable for checking washability, scrubbability, durability, resistance to gloss changes, resistance to reflectance changes and other related specialized properties.

Bulletin No. 166 describing this machine in detail is available from Gardner Laboratory, Inc., Dept. PF, 5521 Landy Lane, Bethesda 14, Md.

For more data circle 19 on Reader Service Card

Park No. 290

BLACKENING SALT

Black Oxide finishing for rust resistance and decorative parts. Speedy black coating in water solution with no electric current. Permanent black finish on ordnance parts, tools, aircraft, bearing races. Dazzling black decorative finish for television cameras, business machines, hardware, metal screens and machine parts. Excellent bond for paints and enamels. Simple one bath operation. Write for bulletin H-16. Park Chemical Co., 8078 Military Ave., Detroit 4, Mich.

For more data circle 233 on Reader Service Card

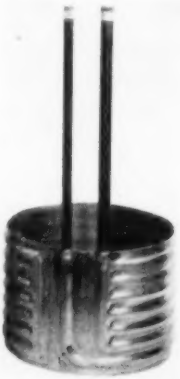
Curved Heat Exchangers

Curved Thermo-Panel coils designed to heat or cool materials in drums have been announced by Dean Products, Inc., 616 Franklin Ave., Brooklyn 38, N. Y. The Dean Thermo-Panel Coil consists of two sheets of metal with suitable embossings, which are welded together, forming channels for passage of heating or cooling media.

★ ★ ★

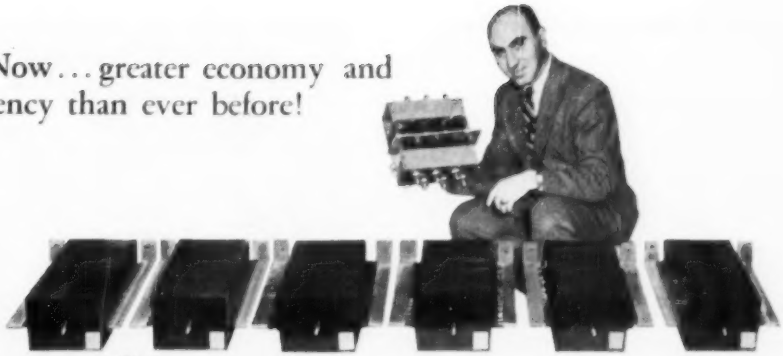
(Right) A curved Dean Thermo-Panel Coil prior to assembly. (Below, left) Cutaway shows unit inside the drum; (right) a curved Dean Thermo-Panel Coil clamped on the outside of the drum.

★ ★ ★



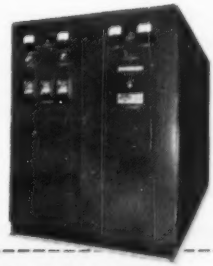
Variations of this type of panel are available to heat materials in drums by immersing the coils or by clamping them on the outside of the drum. All types are available in mild steel, stainless or other suitable metals.

Now... greater economy and efficiency than ever before!



Sel-Rex

GERMANIUM PLATING RECTIFIERS



Efficiency up to 96% — for the life of the unit — is yours with Sel-Rex Germanium Rectifiers. Over 5 years of intensive experimentation and field tests prove that the Sel-Rex Germanium cell experiences no chemical deterioration or ageing. You get more amperes of maintenance-free power per dollar invested than with any other rectification equipment.

There's an appreciable saving in floor space too. A Sel-Rex Germanium Rectifier generally occupies only half the floor space of a conventional unit of equal capacity.

Graphic illustration of the compactness of Sel-Rex Germanium rectifiers is seen in the above photograph. One germanium cell does the job of six conventional selenium stacks. You save a lot of valuable floor space which can be utilized for other equipment or additional work area.

Sel-Rex GERMANIUM RECTIFIERS are custom engineered to your specific requirements ... available in either air or water cooled models, with all types of fully automatic and remote controls. Units from 25 up to 50,000 amperes.

BART-MESSING CORPORATION PF-9
229 Main Street, Belleville 9, N. J.

Gentlemen:

Please rush literature on Sel-Rex GERMANIUM RECTIFIERS

Name _____

Company _____

Address _____

City _____ Zone ____ State _____

Distributor Inquiries Invited

Sel-Rex Rectifier Division

BART-MESSING CORPORATION

229 Main Street Belleville 9, N. J.

It costs no more to own the finest with Sel-Rex

For more data circle 234 on Reader Service Card

Standard sizes are available for use in 55-gallon drums, but the manufacturer states that these units can be made to fit various sized drums.

For more data circle **20** on Reader Service Card

★ ★ ★

Surface Finishing Machines

A series of surface finishing machines, the 300 series, has been introduced by Clair Manufacturing Co., Inc., 1010 S. Union St., Olean, N. Y.

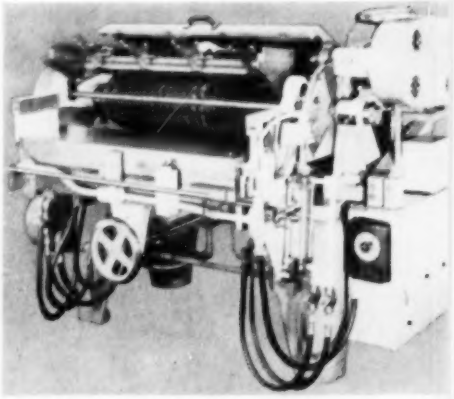
The improved machines are said to reduce floor space required and to improve efficiency of surface finishing operations. They have been field tested by a leading manufacturer of silverware for over two years.

The castings for the motors on these machines are rear-mounted, thus removing the over-hanging motor weights from the main pivot shafts. This feature is said to increase the sensitivity of the buff float.

The overall width of the machines has been reduced from 9 feet 4 inches to 6 feet.

Parts from these machines and the older 200 series are interchangeable, thus allowing a smooth work flow between the older and new models without changing set-ups or tooling.

The No. 302 model replaces the No. 202 double roll glazer and mirror polisher. The older No. 204 spoon and fork polisher, the No. 205 single spindle heeler and the No. 208 for curved handles are replaced by No. 304, 305, and 308 models respectively.



Clair 300 Series Surface Finishing Machine

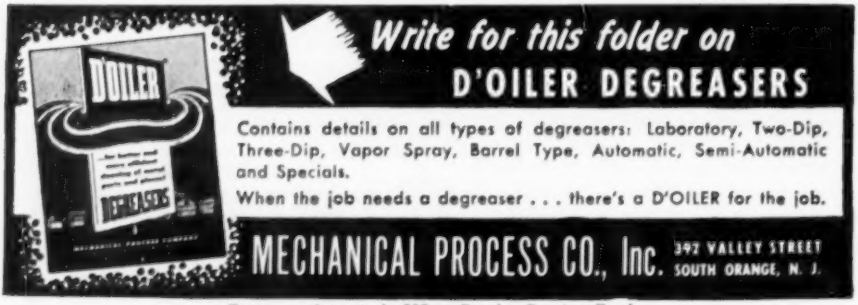
For more data circle **21** on Reader Service Card

★ ★ ★

Titanium Descaler

Titanium forgings as well as other formed parts are now being descaled through the Kolene molten-salt-bath process, it has been learned through the designers and engineers of the process, Kolene Corporation, 12890 Westwood, Detroit 23, Michigan.

The manufacturer states that Kolene-cleaned titanium aircraft forgings


D'OILER
DEGREASERS
Write for this folder on
D'OILER DEGREASERS
Contains details on all types of degreasers: Laboratory, Two-Dip, Three-Dip, Vapor Spray, Barrel Type, Automatic, Semi-Automatic and Specials.
When the job needs a degreaser . . . there's a D'OILER for the job.
MECHANICAL PROCESS CO., Inc.
392 VALLEY STREET
SOUTH ORANGE, N. J.

For more data circle **235** on Reader Service Card

3 STANDARD SHAPES

"RECTANGULAR"

"TEAR DROP"

"DOG BONE"

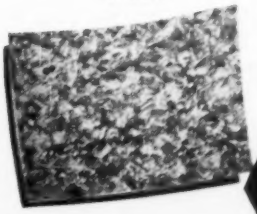
NEW!

SHAPED, EXTRUDED APW SILVER ANODES

CONTROLLED GRAIN SIZE: APW EXTRUSION PROCESS* controls grain size within definite limits—minimizes sheddings

ROLLED FLAT PLATE ANODE SECTION: Photomicrograph illustrates highly irregular, uncontrolled grain size—a major cause of shedding and rough electrodeposits.

*Pat. Pending



APW EXTRUDED ANODE SECTION: Note small, fully controlled regularity of grain size to promote uniform corrosion, smoothest electrodeposits and less rejects.

The three standard shapes of APW Extruded Anodes were developed to extend the useful life of anodes—*to lower plating costs!*

Through scientific design, the distribution of mass material helps to maintain a more efficient ratio between anode weight and active surface area. After 85% by weight has been plated off, this APW anode *retains 80% of its original active surface area!* You profit three ways with longer anode life, minimized polarization and less silver scrap to be refined.

Another equally important advantage of the new APW Extruded Anode is the small, uniform grain size—*controlled between definite ideal limits!* As a result, corrosion is smooth and uniform for consistently smooth electrodeposits. Shedding is virtually eliminated—rejects are a comparative rarity!

To be certain the silver you buy in anodes is used most efficiently, APW will develop special anode shapes to meet particular plating bath conditions. We'll be glad to assist with your anode problems.

THE AMERICAN PLATINUM WORKS

231 NEW JERSEY RAILROAD AVENUE • NEWARK 5, NEW JERSEY

APW

ENGELHARD INDUSTRIES

For more data circle 236 on Reader Service Card

show that (1) metal loss is reduced, (2) there is no etching as a result of the Kolene bath and (3) there is no hydrogen pickup, even when immersed for long periods of time.

The scale on titanium forgings, (common to many other hot formed materials such as chrome nickel, chrome nickel stainless and Nimonic) is removed in the Kolene treatment. Descaled after forming, the surface is in proper condition for machining, and can easily be inspected. Thus, defective parts are located and scrapped before, not after, machining operations.

Parts such as aircraft turbine buckets and blades, which accumulate a heavy oily scale in service, are now being reconditioned by Kolene treatment.

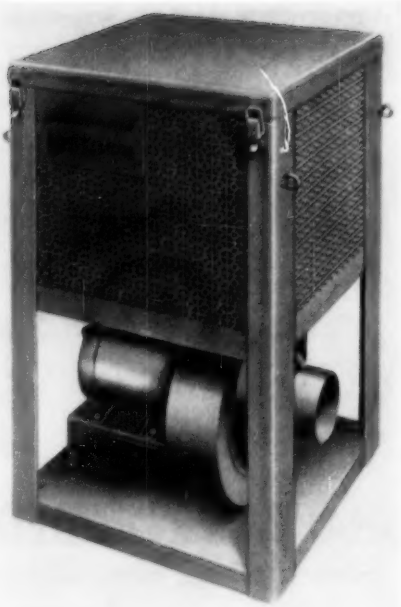
For more data circle **22** on Reader Service Card

★ ★ ★

Mist Collector

A unit that captures fog, smog and mist from surface, cylindrical and thread grinders, lathes, screw machines, and other machine tools using cutting oils has been developed by Hammond Machinery Builders, Inc., 1611 Douglas Ave., Kalamazoo, Mich.

Named the Hammond MistKolector, the machine is offered in two models and in four motor sizes, with volume ranging from 525 to 2,685 c.f.m., and motor h.p. from ½ to 5. The machine requires a minimum of floor space, and can either be "tucked in" around the machine served, or suspended from the ceiling. In addition, the flat top can be used for work or storage space. The unit's filter needs replacing only when suction loss is noted at the hood or vapor is discharging through the filter. Depending on the amount of mist, a



Hammond MistKolector helps keep air clean

METABOND

MEANS *PROGRESS* IN RUSTPROOFING

METABOND is the only effective immersion or spray amorphous type zinc coating in the industry today.

METABOND withstands severe and consistent flexing and bending without chipping or breaking bond.

INTERNATIONAL RUSTPROOF CORPORATION

1575 MERWIN AVENUE • • • • CLEVELAND 13, OHIO

MANUFACTURERS OF RUST PREVENTATIVES & CORROSION SOLVENTS

For more data circle **237** on Reader Service Card

VISCOSITY*

*"That property of a body in virtue of which, when flow occurs inside it, forces arise in such a direction as to oppose the flow." — *Webster*

BROOKFIELD*

*Pioneer and world leader in the development and manufacture of precision viscosity instruments. Today, Brookfield is universally accepted as the World's *Standard for Viscosity Measurement and Control!*

AND YOU*

*A scientist interested in easy, accurate viscosity measurement or control for laboratory or production processes. You'll be happy to learn, too, that more than 300 technical articles and references based on Brookfield and viscosity measurement of 200 different materials have been published in the past ten years. You are welcome to any of this data which may pertain to viscosity measurement control problems you have.

Brookfield know how is yours for the asking without obligation.

Brookfield

ENGINEERING LABORATORIES INCORPORATED

STOUGHTON 11, MASSACHUSETTS

For more data circle **238** on Reader Service Card

filter pad will function efficiently for weeks or months. Replacement is simple in that only a sheet metal cover has to be removed.

The MistKolector helps to clean air for employees; keep the plant cleaner; reduce painting and maintenance costs; and reduce fire hazard.

For more data circle 23 on Reader Service Card

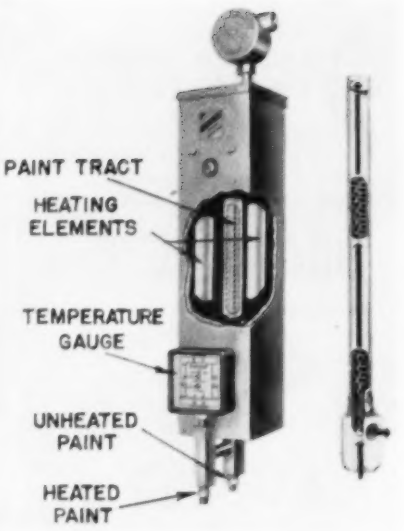
★ ★ ★

Paint Heater

A paint heater incorporating a removable paint tract has been announced by the Binks Manufacturing Co., 3118-40 Carroll Ave., Chicago, Ill.

The paint tract of the unit, called the "Dualheet," is a heated chamber where the temperature of the paint is raised. There are no parts within the chamber that will be affected by the intense heat. Periodic inspection of the paint tract in the Binks Dualheet can be made swiftly by removing it from the unit. Complete replacement of paint tract can be made in less than 5 minutes, it is stated.

When paint is heated in the Binks Dualheet prior to spraying, less thinner is required. Solids are higher and film thickness is greater with one pass of the gun, resulting in greater coverage per gallon of paint. Fewer strokes of the gun provide a reduction of waste due to overspray. Less atomizing air pressure is required. Sags and runs are practically eliminated and a greater cold-check resistance is obtained, the manufacturer states.



Binks Dualheet Paint Heater. (Right) removable paint tract—makes maintenance easier

The Binks Dualheet fits into existing cold spray process systems either as a portable or stationary unit. The device is electrically heated.

Binks paint heaters are available in two basic models. The heavy-duty unit is capable of raising paint temperatures to between 160 and 180 deg. F. at the rate of 15 g.p.h. UL approved, it operates on either 220 or 110 volts.

The standard heater is designed to raise paint temperatures to between 160 and 180 deg. F. at the rate of 8 g.p.h. This unit operates with 110 volts. Both models feature sensitive, adjustable thermostats. Either unit can be in-

PAINT MIXER
MIRACLE PAINT REJUVENATOR
All paint restored to original consistency without opening the can.
2 minutes per gallon.
MIXERS AVAILABLE
¼ PT. to 55 GALS.
MIRACLE PAINT REJUVENATOR COMPANY
127 E. 9th St., St. Paul 1, Minn.
5 GAL. MODEL

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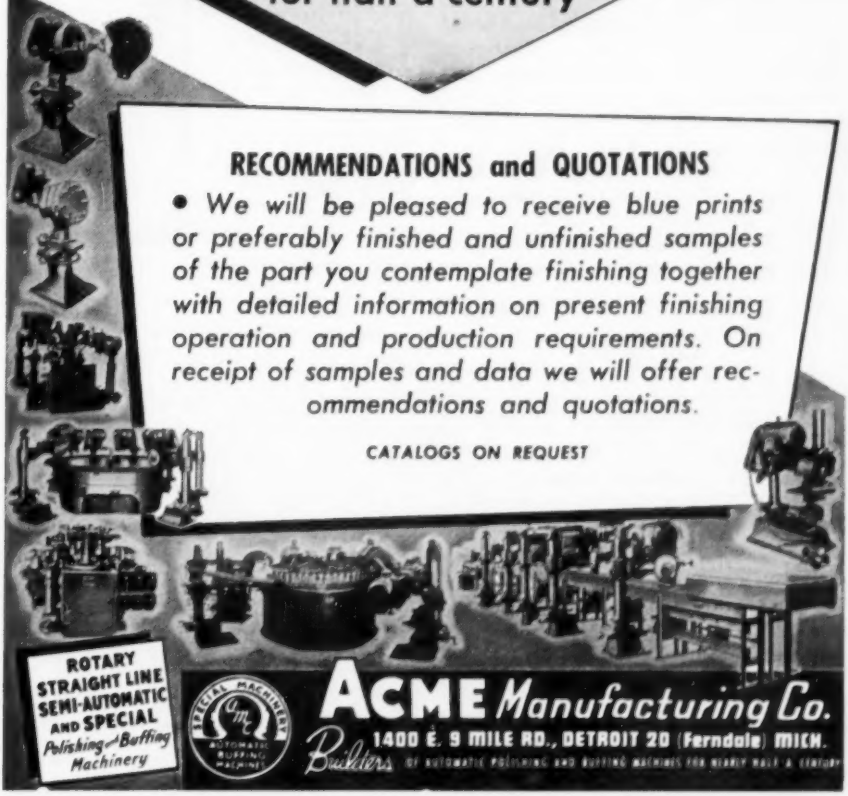
ACME Automatics

FOR HIGH PRODUCTION at LOW COST on

POLISHING and BUFFING • DE-BURRING
WIRE BRUSHING and MICRO-FINISHING

• Proved performance and dependability in industry for half a century



RECOMMENDATIONS and QUOTATIONS

• *We will be pleased to receive blue prints or preferably finished and unfinished samples of the part you contemplate finishing together with detailed information on present finishing operation and production requirements. On receipt of samples and data we will offer recommendations and quotations.*

CATALOGS ON REQUEST

ROTARY STRAIGHT LINE SEMI-AUTOMATIC AND SPECIAL *Polishing and Buffing Machinery*

SPECIAL MACHINERY — AUTOMATIC BUFFING MACHINES

ACME Manufacturing Co.

1400 E. 9 MILE RD., DETROIT 20 (Ferndale) MICH.

Builders OF AUTOMATIC POLISHING AND BUFFING MACHINES FOR NEARLY HALF A CENTURY

For more data circle 240 on Reader Service Card

stalled on the wall of a spray booth.

Refinements on both models adapt heated air controls and recirculating systems for varied applications where it is difficult to maintain a constant paint temperature.

A catalog on the Binks Dualheet line of paint heaters is available from Binks Manufacturing Co., 3118-40 Carroll Ave., Chicago 12, Ill.

For more data circle **24** on Reader Service Card

★ ★ ★

Organic Tumbling Compound

A liquid organic tumbling compound that first acts as a water conditioner and then acts to keep the media and parts clean during barrel finishing has been announced by Finger Lakes Chemical Co., Inc., Etna, N. Y.

The compound can be used on steel, stainless steel, copper, brass, zinc, aluminum and silver without danger of attacking any of these metals, it is stated. It is suitable for use with all types of media and chips (synthetic or natural) and metal shapes, the manufacturer states.

For more data circle **25** on Reader Service Card

★ ★ ★

Flock Gun

A flock gun featuring uniform fiber spraying combined with sufficient velocity for efficient operation has been announced by Black Manufacturing Co., Livingston, N. J.

Black Flock Gun

The "Fibr-Gun" is designed for ease of operation and efficient application of all types of flock. Controls are located in the back of the unit, as on a paint spray gun. Sensitive adjustment permits alteration of fiber flow from a fine stream to one that is wide, heavy and concentrated.

Internal dome design of the gun eliminates the extended nozzle, which tends to clog the even flow of flock fibers. A nylon-faced valve used in air control assures long life.

For more data circle **26** on Reader Service Card

★ ★ ★

Automatic Processing Machine

A machine designed for automatic bulk handling and processing of vari-

CHEM PLASTISOLS AND PRIMER SYSTEM

For Rack Coatings—Tank Linings

Gives Ultimate in Adhesion.

Prevents breakaway at critical contact point.

Write for Booklet

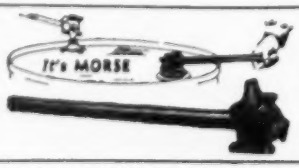
CHEM PRODUCTS INC.

ROCKY HILL 10 CONN.

For more data circle **241** on Reader Service Card

Send NOW for this FIT-ALL DRUM PLUG WRENCH

Instantly loosens, tightens 95% all plugs or bungs in steel drums. Has 16" extra-strong steel tubing handle. Wgt. only 2 lbs. Order 1 or more today!



THOUSANDS IN USE saving time, labor, accidents!

SATISFACTION GUARANTEED..... $3.60

Non-sparking type $5.60

Plus Parcel Post

MORSE MFG. CO., Inc.

762 W. Manlius St., E. Syracuse, N.Y.

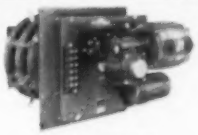
For more data circle **242** on Reader Service Card

In electroplating, anodizing, and allied processes...

Rectifier Performance Depends on Controls

MANUAL TAP SWITCH CONTROL

For both self-contained and remote controlled units. Used in conjunction with a tapped auto-transformer, it provides 22 positions of voltage adjustment from zero to rated voltage.



MOTOR-OPERATED TAP SWITCH CONTROL

For pushbutton control of output from remote location. Used in conjunction with tapped auto-transformer and it also gives 22 positions of voltage adjustment.

The selection of the proper controls with either selenium or germanium rectifiers can be the key to improving your plating and anodizing results. For every installation there is a control which will best fit the application. Let H-VW-M make an engineering survey and recommend the most suitable control to give you not only the best results, but also the maximum in efficiency, flexibility, and economy.

CONTINUOUSLY VARIABLE AUTO-TRANSFORMER

Either manual for small rectifiers, or oil-immersed, motor-driven for larger ratings. Gives full stepless control from zero to rated voltage. Highest efficiency.

SATURABLE CORE REACTOR

Wholly electrical — no moving parts. Gives smooth control from 10% to 100% of rated voltage, provided 10% minimum current load is drawn.

APPLICATION SUGGESTIONS

Use	Recommended Control
Batch Tank Plating	Manual tap switch.
Batch Tank Plating with wide load variations and high production	Motor operated variable auto-transformer or motor operated tap switch.
Barrel Plating	Manual tap switch. No control rectifier.
Cleaning & Pickling	Manual tap switch. No control rectifier.
Conveyor—many stations	Manual tap switch (remote control). Motor operated tap switch. Saturable core reactor. Motor operated continuously variable auto-transformer.
Conveyor—few stations	Automatic voltage stabilization with variable auto-transformer. Automatic voltage stabilization with saturable core reactor.
Chrome strike in combination with Plate	Automatic programming with variable auto-transformer or special series hook-up.
Sulphuric Anodizing	Manual tap switch. Motor operated tap switch. Saturable-core reactor.
Color Anodizing	Automatic constant current with variable auto-transformer. Automatic constant current with magnetic amplifier and saturable core reactor.
Chromic Anodizing	Automatic programming with variable auto-transformer. Combination automatic constant current and automatic voltage stabilization with variable auto-transformer or saturable core reactor.
Electrolytic Metal Refining	Automatic current control with saturable core reactor.

Need Automatic Voltage Stabilization?

For close DC voltage regulation, automatic voltage stabilization will maintain voltage at pre-set level. Use either sensing panel with motor-driven, oil-immersed continuously variable auto-transformer, or special magnetic-amplifier with saturable core reactor. H-VW-M controls can also provide automatic constant current.

Need Automatic Programming?

Motor-operated continuously-variable auto-transformers, plus timers and controls, will set voltage and operate for pre-set time; change to another voltage at pre-set rate; operate at new voltage for given time, then shut the rectifier off.

PLATEMANSHIP

SEND TODAY for free Bulletin ER-105 describing H-VW-M SELENIUM and GERMANIUM Rectifiers and H-VW-M's full line of controls.

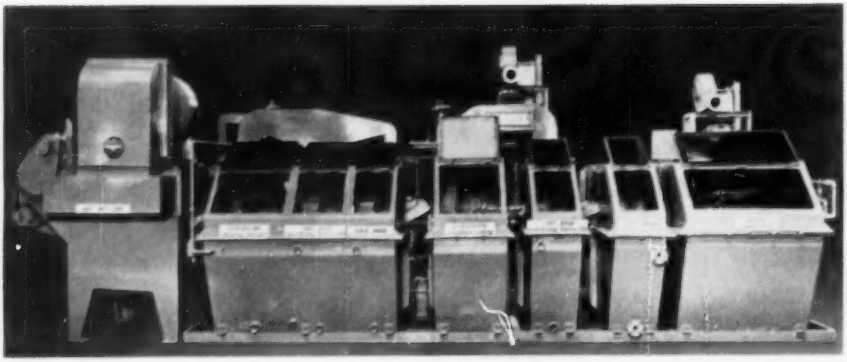
Your H-VW-M combination — of the most modern testing and development laboratory — of over 80 years experience in every phase of plating and polishing — of a complete equipment, process and supply line for every need.

HANSON-VAN WINKLE-MUNNING COMPANY, MATAWAN, N. J.
Plants: Matawan, N. J. • Grand Rapids, Mich.
SALES OFFICES: Anderson (Ind.) • Baltimore • Beloit (Wisc.) • Boston Bridgeport • Chicago • Cleveland • Dayton • Detroit • Grand Rapids • Los Angeles • Louisville • Matawan • Milwaukee New York • Philadelphia • Pittsburgh • Plainfield • Rochester St. Louis • San Francisco • Springfield (Mass.) • Utica Wallingford (Conn.)

H-VW-M

INDUSTRY'S WORKSHOP FOR THE FINEST IN PLATING AND POLISHING PROCESSES • EQUIPMENT • SUPPLIES

For more data circle 243 on Reader Service Card



Detrex Automatic Rotary Transfer Continuous Multi-Stage Processing Unit: automatic handling

ous sizes and shapes of metal parts has been announced by Detrex Chemical Industries, Inc., Box 501, Detroit 32, Michigan.

The machine can be built to process parts through one or more stages of chemical treatment. It can incorporate such operations as washing, rinsing, pickling, phosphate coating, application of lubricants and drying. The drum and tank in each solution can be fabricated from the most desirable materials for that particular solution, as the drums are stationary and the parts are transferred from stage to stage.

The work being processed is kept in constant motion. Additional tumbling action can be incorporated when desired to pickle or phosphate coat cup-shaped parts uniformly. Parts are oriented for proper drainage as they transfer from drum to drum.

All drums in the machine rotate on heavy shafting, mounted above the solution tanks.

A wide range of flexibility with regard to time cycles and transfer time can be incorporated.

The unit in the accompanying photograph has a capacity of 20 cubic feet per hour when operating at ½ r.p.m. It is capable of handling cup-shaped and cube-shaped parts, and rods or bolts up to one inch in diameter by seven inches long. It incorporates acid pickle, cold rinse, hot neutralizing rinse, phosphate coating, cold rinse, hot neutralizing rinse, application of drawing lubricant and hot air drying.

For more data circle **27** on Reader Service Card

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CLEVELAND, OHIO
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McKeon's "Liquid Sulphur"
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Sulphur Products Co., Inc.
McKeon Bldg., 621 W. Pittsburgh St., Greensburg 6, Pa.

For more data circle **245** on Reader Service Card

WHAT KILLS YOUR PUMPS?

CORROSION...ABRASION...VIBRATION?

Heavy rubber or special linings molded in the case to resist corrosion and abrasion

Get the INSIDE story for longer pump life and less maintenance

Large prelubricated ball bearings

One-piece molded impeller and oversized shaft prevent oscillation

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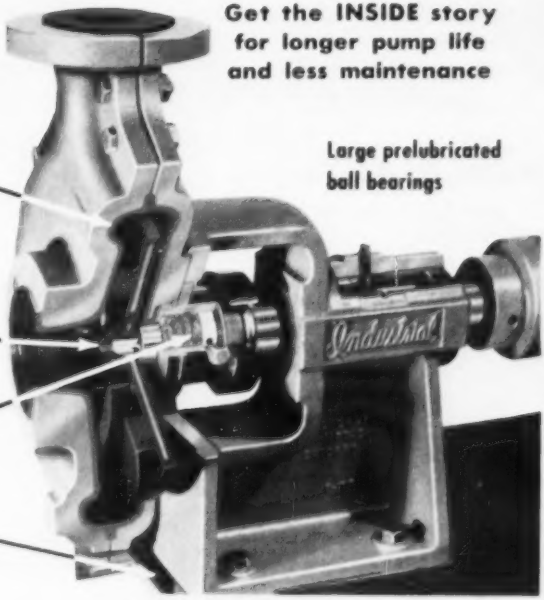

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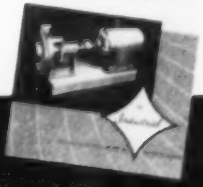
Lined to suit the job . . . with the exact rubber formula most resistant to your processes fluids in INDUSTRIAL'S own rubber compounding and lining division. Also lined with Neoprene, Saran, Hypalon or Hycar. Many sizes up to 450 gpm.

Write for 8-page bulletin with head, GPM and efficiency graphs.

CENTRIFUGAL PUMPS



Industrial

INDUSTRIAL

FILTER & PUMP MFG. CO.

5904 OGDEN AVENUE • CHICAGO 50, ILLINOIS

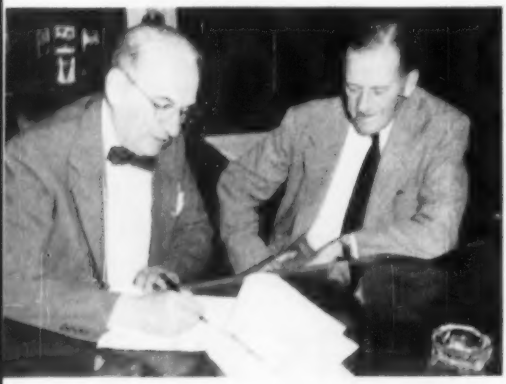
For more data circle 246 on Reader Service Card

News of the Industry

New plants . . . company news . . . new positions . . . meetings . . . training courses . . . societies

NEW PLANTS

Plans for a million dollar building and expansion program for **Ransburg Electro-Coating Corp.** of Indianapolis, Ind., have been announced by Harold Ransburg, vice president of the company.



Harper J. Ransburg (left), president, signs the contract for the construction of the new Ransburg Electro-Coating Corp. building in Indianapolis as Carl Geupel, contractor, looks on.

The new, single story building is to be located at 4000 W. 56th St., Indianapolis. Construction will begin before the year's end and is expected to be completed late in 1957.

The new 80,000 square foot building will house the administrative, sales and engineering offices, the engineering and test laboratories, manufacturing, and a warehouse.

A separate fire-proof building in the rear will be used for paint and solvent storage.

Steadily increasing business and new product development in the electrostatic spray painting field make necessary the present expansion in sales, service and production facilities, Mr. Ransburg said. He went on to explain their growth in sales volume: In a space of six years, Ransburg's sales are at the rate of 17 times 1950 sales.

Ransburg originated the electrostatic spray painting method.

Ransburg Electro-Coating Corporation's new building will house the administrative, sales and engineering offices, laboratories and part of the manufacturing and warehouse facilities.

Schaffner Bias Buffs

your answer for economical performance

- TAILOR MADE FOR YOUR TOUGHEST BUFFING OPERATIONS
- FULLY VENTILATED
- COOLER RUNNING
- LOW COMPOUND CONSUMPTION
- FEWER SECTIONS NEEDED
- GIVES LONGER LIFE

The buff you select is all important—it will mean longer buff life and greater production from a buff wheel.

Specify and buy the proven Schaffner Metal Center Air Cooled bias (type) Buff, and don't be satisfied with imitations. You'll find Schaffner buffs last longer, consume less compound and reduce rejections.

Write us. We'll run a test for you in your own plant and prove our claims.

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MANUFACTURING COMPANY, INC.

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* TRIPOLI COMPOUNDS * CHROME COLORING ROUGE * GREEN ROUGE * JEWELERS' ROUGE * CROCUS COMPOUND * STAINLESS STEEL COMPOUNDS * ALUMINUM BUFFING COMPOUNDS * ALL-PURPOSE BUFFING COMPOUNDS * WHITE COLORING COMPOUNDS * NICKEL BUFFING (LIME) * EMERY CAKE * PLASTIC BUFFING COMPOUNDS * TALLOW GREASE STICK * PUMICE GREASE STOCK * POLISHING WHEEL CEMENT * STEEL POLISHING COMPOUNDS

COMPOUNDS MADE IN BAR, SPRAY OR PASTE

For more data circle **247** on Reader Service Card

Several additions to the **Frederic B. Stevens, Inc.,** Customer Service Laboratory facilities have been completed recently.

Stevens facilities for metal finishing product research, development and customer service work now total 6,000 square feet plus office facilities.

The two most recent additions added a total of 360 and 2,050 square feet.

The larger addition includes a simulated Stevens Automatic Barrel Line capable of reproducing any barrel plating or processing cycle.

Also included is a standard Stevens Horizontal Plating Barrel set-up that permits comparison of maximum controlled effective plating loads for both manual and automatic operations.

Four storage tanks and two 2,000-ampere, 24 volt rectifiers are also part of the installation.

The Stevens Cyanide Package Waste Disposal Plant, under the direction of Leonard Singer and Victor Matosh, has been added to the laboratory facilities and is used for experimental work in that area.

The second addition to Stevens Customer Service Laboratory consists of a complete buffing composition cleaning set-up. This facility is under the supervision of Dr. LeRoy High.

It will enable Stevens to include recommended cleaning cycles as part of future L.V. (laboratory-verified) Reports on recommended buffing and polishing cycles.

The original L.V. Reports were instituted nearly four years ago as a customer service. Today this lab consists of four conventional buffing lathes, one variable speed buffing lathe, one automatic buffing and polishing unit for experimental work and two abrasive belt polishing installations. Samples of over 125 buffing and polishing compositions and 250 buffs, belts, wheels and brushes are indexed and available for experimental and L. V. customer recommendations. Walter Rolak is in charge of this service.

★ ★ ★

Rampe Manufacturing Co., Cleveland, Ohio, manufacturer of tumbling equipment has announced a 50 per cent addition to the company's manufacturing space. The additional space is at the same address.

★ ★ ★

Harry Miller Corp. has recently added 33,200 square feet of space for increased production to the existing plant at 4th and Bristol Sts., Philadelphia 40, Pa.

Among the newer products developed by the company are Hamilkeer, a coolant that replaces soluble oil; Immunol, a solvent and rustproofing agent; Activol, a chemical used to improve acid baths.

★ ★ ★

The Lea Manufacturing Company, Waterbury, Connecticut, specialists in the application of surface finishing methods and in the manufacture of industrial abrasive finishing materials and electrochemical processes, has announced that the third section of a large new plant they are building is now operating.

The large extension to Building No. 2 is now devoted exclusively to the processing, packaging and handling of the company's greaseless abrasive composition, Lea Compound.

Large extension to Lea Manufacturing Company's plant is shown on right of photograph.

APPLIANCE FINISHING MADE EASY!

with STANLEY SPRAYING PLASTISOL

On appliances tough, colorful Stanley Plastisol outwears, and outsells, baked enamel! In more and more industrial uses its thick, abrasive-resistant deposit stands fast against corrosion. Best of all, Stanley Spraying Plastisol, in high or medium gloss, can be sprayed on successfully by any operator who follows the simple directions. Write for full details and ask about the many other Stanley Plastisols for hot dip, cold dip, and electrostatic applications. Address your request to Stanley Chemical Company, 31 Berlin Street, East Berlin, Connecticut.

STANLEY CHEMICAL

CUSTOM VINYLS FOR PROTECTIVE COATINGS

For more data circle **248** on Reader Service Card

The fourth and last project in the building plans consists of a large office and research building. This is planned for completion in 1957.

★ ★ ★

Harshaw electroplating chemicals are now being manufactured in Britain in the newly opened plant of **Harshaw Chemicals Limited**, Waltham Cross. The new company is a wholly-owned subsidiary of **The Harshaw Chemical Company**, Cleveland, Ohio.

Manager of the new company is A. C. Benning, long connected with the manufacture, sale and technical service of electroplating chemicals for the parent company in the United States. Mr. S. E. Pross of Hounslow has been appointed assistant general manager.

Production in the plant will be limited at first to chemicals and materials for operating the Perflow, Perglow, Nubrite and Nibrite processes of electroplating. Other Harshaw products

A. C. Benning

S. E. Pross

are expected to be added as market demands can be developed.

COMPANIES

In a paper delivered at the Washington, D. C., convention of the American Electroplaters' Society on June 19, **Kenneth G. LeFevre**, vice president of the **Protective Coatings Division of Metalweld, Inc.**, of Philadelphia, pointed out that many firms miss ideal opportunities to put their plants in order by scheduling maintenance work for "weekends, annual plant shutdowns for vacations, slack periods, or other times when production facilities are normally shut down."

With modern continuous production techniques, Mr. LeFevre pointed out, breakdown of a key piece of processing equipment can shut down an entire plant, costing the company thousands of dollars.

The talk specifically dealt with corrosion protective lining for immersion service. It discussed types of linings, their advantages, disadvantages, and application.

Metalweld, Inc., is an applicator of all types of coatings and linings used in protection against corrosion and contamination.

★ ★ ★

Test runs on the low temperature (1300 deg. F.) porcelain enamels announced by **Pemco Corporation** are

Engineered for Extra Years of Trouble-Free Operation

WALKER
Selenium Rectifiers

You can't beat Walker Selenium Rectifiers for dependable D.C. regardless of the size of your plating installation.

These outstanding rectifiers are especially designed to give year in, year out service . . . minimum maintenance . . . no moving parts . . . nothing to wear out . . . nothing to get out of adjustment.

You get more for your money when you use Walker Selenium Rectifiers. Get the complete story, today. Write

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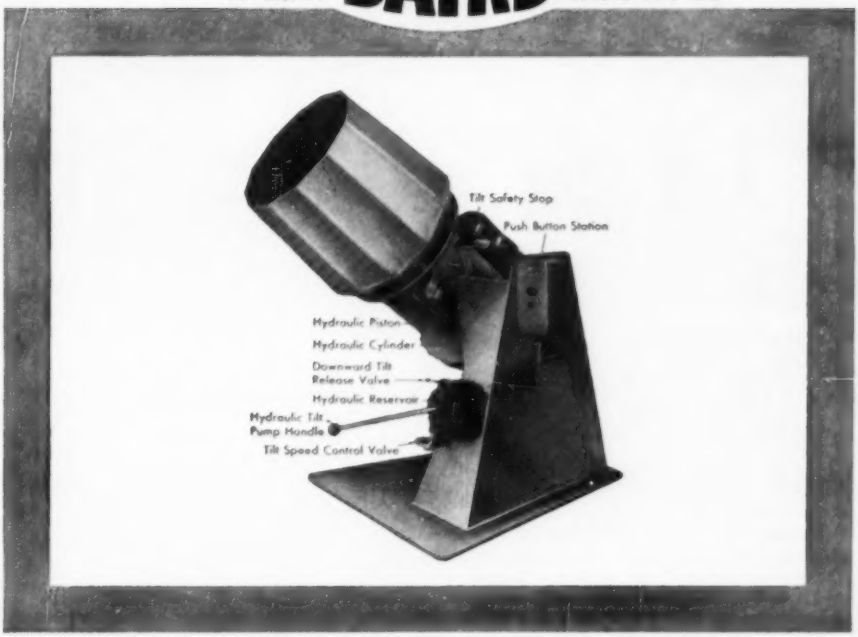
...ask BAIRD about it



Find out why this **BAIRD** Model **H** is the best Tumbling Machine for many installations

Tumbling operations have become one of industry's most effective low-cost production methods . . . with wide-open opportunities for increasing application.

The Baird Model H machine . . . entirely new in design . . . has been developed with these important expanding applications in mind. It is essentially a production-line machine . . . built to pay out in freedom from maintenance, long service life, and operating ease when installed for constant-duty service.

It is "clean limbed" and efficient, with "finger-tip," effort-saving controls for either manual-hydraulic or power tilting. All types of barrels may be accommodated, and Baird furnishes a complete selection, including electrically heated types.

If your requirements call for tumbling machines capable of constant, dependable production-line operation at minimum cost per service hour, this NEW BAIRD MODEL H will be your best selection. Our experience is yours to call upon . . . "Ask BAIRD about it." Write Dept. PF.

AUTOMATIC MACHINE TOOLS • AUTOMATIC WIRE & RIBBON METAL FORMING MACHINES • AUTOMATIC PRESSES • TUMBLING BARRELS

THE BAIRD MACHINE COMPANY

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For more data circle **249** on Reader Service Card

Charles P. Lohman (center) discusses frit development with James B. Willis (left), service manager, and Dr. George H. Spencer-Strong, head of Pemco Research & Development Labs.

getting good reports from a number of companies, according to Charles P. Lohman, vice president of the Baltimore, Maryland company.

Pemco has three different low-temperature frits in production and others being developed. Two of these frits are cover coats, one for general purpose use for signs, architectural and general jobbing use, and the other cover coat is for stoves, refrigerator liners and exteriors, washing machine exteriors, signs and architectural uses. The third low-temperature frit is a semi-opaque ground coat for signs, architectural, general jobbing and one-coat single fire finishing work.

Since these enamels can be used on products basically designed for organic finishes with little or no changes, products that could not have a porcelain enamel finish before because of warpage or distortion can now have them, states Mr. Lohman.

★ ★ ★

Robert J. Huber, president, **Michigan Chrome & Chemical Co.,** Detroit, Michigan, has announced the acquisition by that company of the assets of **Pyramid Plastics Company,** Chicago.

The acquisition of Pyramid adds to the present line of Miccro products a complete line of tapes, tubes, rods, shapes, coatings, and specialized products for industrial use. Pyramid products are fabricated from practically all thermoplastic and cellulosic materials. The facilities in Chicago will be expanded to manufacture and warehouse Miccro products for service to the Midwest.

Pyramid Plastics will continue operations under the same name with James Palmer remaining as president and general manager.

Mr. Huber has also announced the formation of Michigan Chrome & Chemical Ontario, Ltd., for the manufacture and distribution of Miccro products in Canada.

★ ★ ★

The formation of **Circo Cleaning & Finishing Equipment Corp.** as a wholly-owned subsidiary of **Circo Equipment Company,** Rahway, N. J., has been announced by Melville Morris, president.

The new firm will design and construct custom-planned installations of all sizes, from the smallest conventional parts washers to multi-unit, fully automated systems which have integral washers, dryers and paint units.

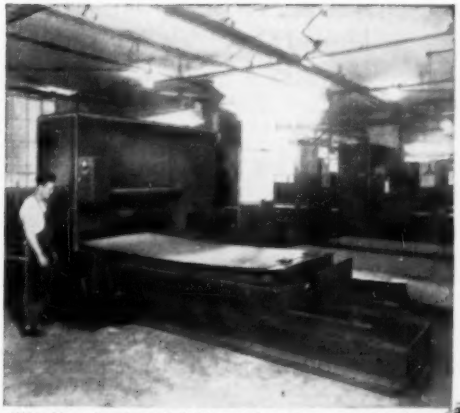
Officers of the Circo Cleaning & Finishing Equipment Corp. are: Melville Morris, president; Jerome Scherzer, vice president; Stanford Barlett, manager; and Henry Stanly, chief engineer. Administrative engineering and production facilities are located at 51 Terminal Ave., Clark (Rahway), N. J.

★ ★ ★

The **J. J. Siefen Company** has announced that the **School of Spraying,** a demonstration conducted in plants for the benefit of employees engaged in buffing operations, has been widely accepted by the industry since its inception in October 1954.

The school has been found especially beneficial to men who work with automatic buffing equipment, the company states.

Any company wishing to have the school conducted in its plant should contact Ralph Hale at the J. J. Siefen Co., 5657 Lauderdale, Detroit 9, Mich.



HILL Sheet Grinder and Polisher with reciprocating hydraulic table processing individual sheets.

HILL

GRINDING and POLISHING MACHINES

How much is it costing you to produce ACCEPTABLE finishes on FLAT surfaces

HILL Pinch Roll Grinder and Polisher for "Wet" or "Dry" operations. (Shown in series for straight line production)

HILL 2-Roll Vertical Abrasive Belt Grinding and Polishing machines are the logical result of 25 years of research and experience in producing self contained units for successfully processing ferrous and non-ferrous sheets. We have consistently proven that wide abrasive belt grinding and polishing equipment must incorporate these fundamental features — rugged construction, simplicity of design, accessibility, versatility and centralized controls.

HILL abrasive belt polishing machines are recommended for continuous operation and insure lower production costs with superior finishes as required today by the manufacturers of decorative plastics, food processing equipment, automobile bumpers, lithographers and photo engravers plates, home appliances, etc., etc.

Both types of machines are normally built up to 60" wide, and larger capacity equipment can also be furnished.

Your inquiries are solicited for detailed information and recommendations.

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For more data circle 250 on Reader Service Card

Lasalco, Inc., St. Louis manufacturer of electroplating equipment, has been appointed regional distributor for Diamond CPA 1800, a chromium plating additive developed by the **Chromium Chemicals Division** of the **Diamond Alkali Company.**

The manufacturer states that cathode current efficiency tests using CPA 1800 show a substantial increase. Because higher current densities can be used, less plating time is required for deposition of thick deposits. Temperature is reported as being less critical, a feature important in decorative chrome-plating operations. Bright deposits are obtained at temperatures ranging from 70 to 150 deg. F.

Advantages include easier anoding in hard chrome plating and the elimination of oversize plating on large parts.

★ ★ ★

An English manufacturer came to Chicago recently as a guest of John Jumer, president of **Electro-Glo Co.,** to study Electro-Glo's process for electrochemical finishing of metals as a step saver in his own fabrications.

Eric Davidson, managing director of Davidson, MacGregor & Co., Ltd., of Winchfield, Hampshire, England, makers of such metal products as springs, gaskets, ball bearings and rollers, said he found a relaxed casual atmosphere to be the keynote in business firms throughout the country.

Mr. Davidson admitted his ease in reaching top executives may be due in part to the fact that he's a foreigner. But he insisted that his reception went beyond ordinary hospitality.

★ ★ ★

When the peace had been signed in 1945, signaling the end of World War II, executives of **Frederic B. Stevens, Inc.,** Detroit foundry and metal finishing equipment and supply firm, sat back to await the rush of orders for automatic aluminum anodizing equipment. It was ten years in coming.

During World War II, Stevens had been a prime manufacturer of aluminum anodizing equipment for the Government's war program.

The expected flow of orders after the war did not materialize as rapidly as expected, however.

The company feeling was summed up by Frank Watt when he said:

"We knew what the tremendous potential of anodized aluminum was—but the buying public had to be sold. This job was done for us by such prime producers as Reynolds, Alcoa and Kaiser."

The years 1953 and 1954 saw a sharp up-sweep in anodizing equipment orders. 1955 saw twice as many orders for automatic equipment come through the Stevens office as '53 and '54 combined. The first quarter outlook for 1956 tops 1955's first quarter. Another sales figure speaking well for the future of aluminum is the 50 per cent increase in sales during 1955 of Stevens buffing compositions used in the final finishing of aluminum.

Aluminum anodizing is necessary because basic aluminum is light but soft. The multiple uses to which aluminum has been put would not have been so extensive had it not been for aluminum anodizing processes.

Anodizing aluminum is accomplished by either of two methods: chromic acid or sulfuric acid anodizing.

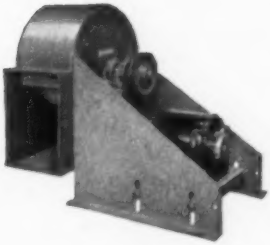
The first method is the pet of the exacting demands of the U. S. Government. Almost all war work was done in this manner.

The second method, using sulfuric acid, provides a tougher deeper film and is now universally used in non-strategic industry. Stevens automatic machines work with either method.

Both methods turn the exterior film on aluminum into aluminum oxide, an abrasive that stiffens and toughens aluminum and renders it useful where light-weight-corrosion-resistant materials are in demand. Without anodizing, aluminum is too soft for most uses.

Currently the auto industry is grabbing at anodized aluminum. Three of the prestige cars are sporting anodized aluminum grilles this year—two in color. This heralds a trend to colored grilles in 1957 lower priced models. Stevens execuitves feel that the big push is on, not only in autos but in

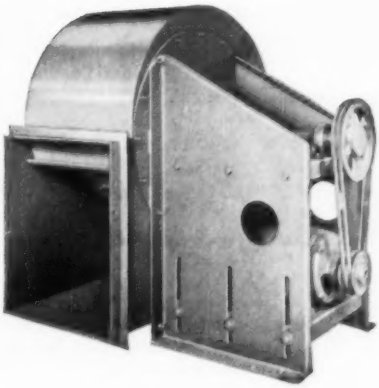
nyb



Nos. 76 and 91 Belted Junior Fan

GENERAL PURPOSE FANS

Recommended for their ease of installation, low maintenance cost and space saving features



Portable, self-contained units of medium capacities for low pressure industrial and ventilating applications. Designed particularly for use with duct systems.

General Purpose Fans are made in three types and eight basic sizes with capacities from 1200 to 19,000 cfm. (Junior fans in five sizes from 160 to 4100 cfm). These include both direct connected and belt driven models.

nyb products have 65 years of manufacturing experience and engineering knowledge built into them. All ***nyb*** products are laboratory tested, accurately rated and fully guaranteed in strict accordance with standard test codes.

Write for Bulletin 563

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FACTORY, LAPORTE, INDIANA

For more data circle 251 on Reader Service Card

practically all other consumer lines.

The metal that was so necessary in war production has come into its own. Frank Watt, Stevens general sales manager, said:

"People realize that quality and lightness can be combined. Everything from autos to refrigerators to office buildings to colored tumblers contains aluminum today. Aluminum is now accepted by the public. It took a little longer than we expected, but we have crossed the threshold."

One optimistic Stevens executive said last week that he expected "the annual increase in the use of anodized aluminum to come in a geometric progression."

NEW POSITIONS

New assignments for three executive engineers in the **Federated Metals Division of American Smelting and Refining Company** have been announced.

B. E. Anderson is now chief engineer of Federated Metals Division with headquarters in Salt Lake City, Utah. **Arthur F. Kohn, Jr.** has become assistant to the general manager with headquarters at Perth Amb y, N. J. **Robert Dean Mathis** is named superintendent of the Los Angeles Plant of Federated Metals Division.

★ ★ ★

Richard L. Heiniger has been appointed **Sales Manager** of the **Coated Abrasives Division, Armour and Company,** Alliance, Ohio.

★ ★ ★

Albert E. Forster has been elected chairman of the board of directors of **Hercules Powder Company** to succeed **Anson B. Nixon,** who has retired. Mr. Nixon will remain as a member of the board of directors.

All other officers of Hercules Powder Company were re-elected.

★ ★ ★

Two appointments in the New York office of Solvay Process Division, **Allied Chemical & Dye Corporation,** have been announced by L. B. Gordon, vice president.

H. W. McNulty has been appointed technical assistant to the manager of the Organic Chemicals Section, and **T. W. Reed** has become technical assistant to the director of Product Development.

The new appointees will make their headquarters at 61 Broadway, New York, N. Y.

★ ★ ★

Promotion of **Maynard H. Patterson** and **Kenneth J. Shea** to new positions in the international operations of **Minnesota Mining & Manufacturing Co.,** St. Paul, Minn., has been announced by Clarence B. Sampair, president of 3M International.

Mr. Patterson has been named vice president and general manager of the International division and will be responsible for the over-all operation of 3M's activities outside the U. S.

Mr. Shea has been promoted to vice president and general manager of 3M's Canadian subsidiary.

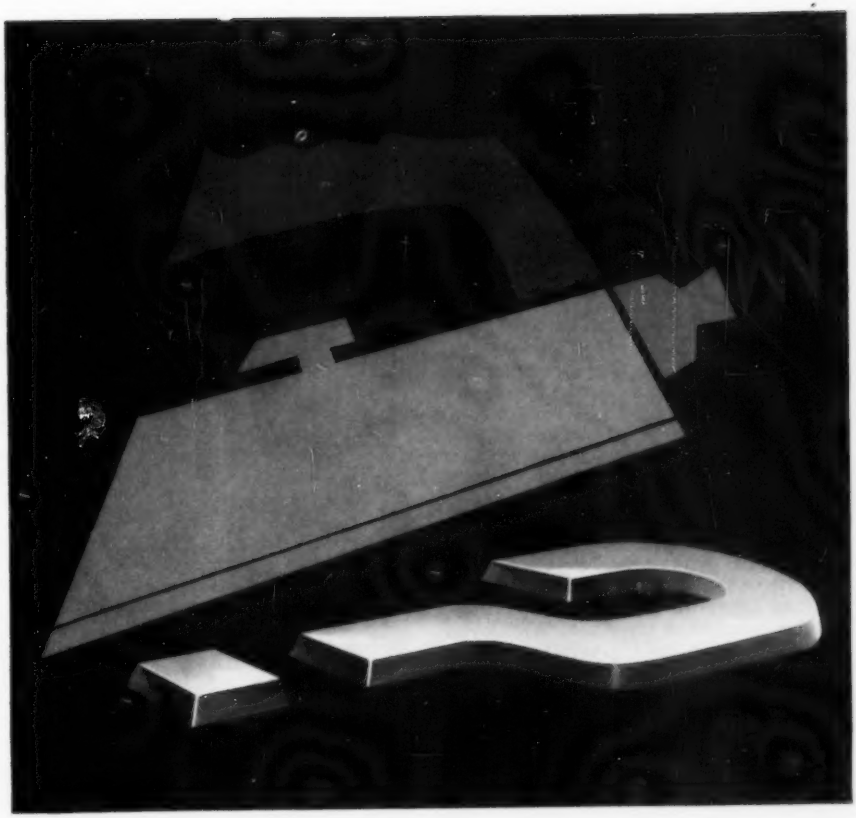
The International division directs 3M's export activities and manufacturing operations in Canada, Mexico, England, France, Germany, Australia, Brazil andArgentina. 3M International sales have grown from $5 million in 1950 to over $40 million in 1955.

★ ★ ★

William A. Crandall has been appointed sales representative for the **DeVilbiss Company** in the eastern half of New York state, excepting Manhattan. His headquarters will be 106 Arsenal Drive, Syracuse, N. Y.

Albert George has been named representative for the New England territory other than the state of Maine and parts of New Hampshire, and cities of Boston and Providence. Mr. George resides in Packanack, N. J.

Both Mr. Crandall and Mr. George have had automotive experience and have recently completed a course in the DeVilbiss Company's school of spray finishing at the main plant in Toledo and laboratory shop work in the DeVilbiss customer research headquarters.



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DIAMOND CHEMICALS

Diamond Chromic Acid

For more data circle 257 on Reader Service Card

Dr. Richard N. Rhoda has been appointed head of the Platinum Metals Section of the **International Nickel Company's** Research Laboratory at Bayonne, N. J.

Dr. Rhoda has been associated with International Nickel since 1953.

Emil G. Holmberg has joined the Corrosion Engineering Section of the **International Nickel Company's Development and Research Division** in New York, O. B. J. Fraser, assistant division manager, has announced.

★ ★ ★

George A. Stutz, founder of the **George A. Stutz Manufacturing Co.,** Chicago, Ill., has been elected chairman of the board, and his son, **George L. Stutz** has been made president.

George L. Stutz attended Northwestern University in Evanston, Illinois, where he received a Bachelor of Science degree in 1943. Upon graduation he enlisted in the Army Air Corps and was sent to the University of Wisconsin. After completing preliminary studies there, he was sent to the University of Chicago and was graduated a meteorologist.

After the war he was honorably discharged and was then employed as a salesman by the George A. Stutz Mfg. Company. He has acted in that capacity for eleven years.

George A. Stutz

George L. Stutz

William J. Hennessy has been appointed eastern regional sales manager for **Kelite Corporation,** Berkeley Heights, N. J., manufacturer of industrial chemicals and steam cleaning equipment.

Mr. Henriessy was formerly associated with Pennsylvania Salt Manufacturing Company as Sales Supervisor, Metal Processing Department.

William J. Hennessy

Stanley F. Peschken

Stanley F. Peschken, Minneapolis, Minn., has been named West North-central area representative for the industrial products division of the **Pioneer Rubber Company,** Willard, Ohio, makers of Stanzoil, Stanflex, Pacemaker and Sheergrip industrial gloves.

★ ★ ★

Charles A. Bicking has been appointed manager of the Quality Control Branch of the Research and Development Division of **The Carborundum Company,** Niagara Falls, N. Y.

Although the actual control of products of high quality and superior uniformity and dependability will take place in the manufacturing divisions of Carborundum, Mr. Bicking will head a staff agency under Major General Leslie E. Simon, director of Research and Development, that will devise, install and initially operate scientific systems for improved quality until the manufacturing divisions are fully competent in the new techniques.

R. W. Preston

R. W. Preston has been appointed to vice president of the Eastern Branch of Naraco, it has been announced by Frank Herr, president of **National Rack Company**, Paterson, N. J. Naraco is known for designing and producing plating and anodizing racks and materials handling racks for automation.

In Mr. Preston's new duties he will also be assistant to the Eastern plant manager.

MEETINGS

The **Philadelphia Branch** of the **A.E.S.** will hold its annual educational session and banquet at The Benjamin Franklin Hotel, on Saturday, Oct. 20.

The afternoon educational session under the direction of Dr. A. Kenneth Graham, president of Graham, Crowley & Associates and former A.E.S. executive secretary, will feature three papers on nickel, multiple coatings.

A banquet, show and dance will follow in the evening.

SOCIETIES

William L. Foy, Chairman of the Host Committee of the **Federation of Paint and Varnish Production Clubs**, has announced the four subcommittee chairmen who will assist him with arrangements for the Federation's 1956 Annual Meeting at the Netherland Hilton Hotel, Cincinnati, October 21-24.

They are as follows: Registration, **Walter L. Ziegler**; Banquet, Dance and Entertainment, **Lawrence Bing**; Ladies Entertainment, **Harry Pansing**; and Floor, **Carl J. Opp.** All are members of the C-D-I-C Paint and Varnish Production Club.

★ ★ ★

Officers of the **Miami Branch, A.E.S.**, newest branch in the Society, are conducting an energetic campaign to

(Left to right) Warren Smith, South Florida Test Service; Ernest Owens, National Airlines; M. H. Dent, Pan American Airways; Earl M. DeNoon, owner and technical director, South Florida Test Service. Both Mr. Dent and Mr. Owens are vice presidents of the Miami Branch of the American Electroplaters' Society. (Photograph by PRODUCTS FINISHING.)

become well acquainted with all the members and to recruit new members for the Branch. The accompanying photo was taken during the visit of Ernest Owens and M. H. Dent at the office of South Florida Test Service in Miami.

★ ★ ★

Plating and metal finishing job shop owners throughout the United States stand to receive additional nickel in the near future, according to an announcement by Mariano Ranno, nickel committee chairman of the **National Association of Metal Finishers.**

Mr. Ranno, a partner in Imperial Plating Company, Brooklyn, indicated that in the wake of a series of hearings before the U. S. Senate Select Committee on Small Business, the long-awaited "green light" would be forthcoming soon from the Office of Defense Mobilization.

Mr. Ranno pointed out two solutions to the nickel problem:

1. Obtain and convert nickel ore sinter and nickel oxide from the United States-operated Nicaro nickel fields in Cuba (nickel ore sinter and nickel oxide can be converted into nickel anodes or nickel salts through a comparatively easy refining process).

2. Obtain Office of Defense Mobilization authority to permit International Nickel Company not to remove job shop allocations should platers receive Nicaro nickel and, in this way, provide additional nickel to the job shop plating industry.

Hopeful of obtaining additional nickel in the near future, Mr. Ranno stated that the Department of Commerce is in the process of submitting two reports to Congress urging a positive, corrective course of action.

The N.A.M.F., an organization of plating and metal finishing job shop owners, has expended thousands of dollars and man hours in behalf of nickel users, according to Mr. Ranno.

"We need the continued support of member and non-member job shops alike if we are to obtain not only the necessary nickel allocation, but the proper recognition and representation in government circles as small business men in a very vital field of commercial endeavor," stated Mr. Ranno.

The entire "nickel story" may be obtained by any interested organization by writing to Mariano Ranno, N.A.M.F. Nickel Committee Chairman, 100 Metropolitan Avenue, Brooklyn, N. Y.

TRAINING COURSES

Robert C. Cripe

The **Joseph B. Kushner Electroplating School** of 115 Broad St., Stroudsburg, Pennsylvania, has announced the winners in its recent Electroplating Know How Scholarship Contest.

First Prize, a scholarship for the home study course in modern electroplating given by the Joseph B. Kushner Electroplating School, was won by Robert C. Cripe of San Antonio, Texas.

Mr. Cripe is the process control chemist of the plating unit at the Kelly Air Force Base in San Antonio. He is presently the librarian of the San Antonio Branch of the American Electroplaters' Society. His winning statement is:

"There are now more opportunities than ever in the electroplating field because the freer exchange of information, the ever increasing scientific approach, and the entry of scientific experts into the field have resulted in the discovery and development of more and more applications for plating. These new applications, their development, and use, have created ever increasing opportunities for manufacturers, platers, and scientists."

Second Prize, a Sur-Ten Meter for measuring the surface tension of plating solutions and dips, was won by Lester J. Erckman, a senior standards

engineer with Link Aviation Inc. of Binghamton, N. Y.

Third Prize, also a Sur-Ten Meter, was won by Lou Dabrowski, chemical engineer with the Canada Wire and Cable Co., Leaside, Ontario.

NECROLOGY

The vigorous career of **Fredrick W. Wagner,** 41, vice president of **Wagner Brothers, Inc.,** came to an untimely end August 3, when his light plane crashed on a flight from Pontiac to the Wagner summer home at Higgins Lake, Mich.

Mr. Wagner was widely known and esteemed by the metal finishing world in which he had been active for twenty years. Originally part owners of the A. T. Wagner Co., founded by their father, the two Wagner boys gathered early sales experience in the plating and foundry supply business, then launched the Wagner Brothers Company in 1940.

As the company began to manufacture anodes, then plating equipment and later chemicals, the two-fisted but good-humored and always likable Fred became a symbol of the giant organization he helped to build. He leaves a mark the industry will not soon expunge. The loss to the Wagner family, the corporation and to the metal finishing industry is beyond calculation.

MEETINGS of INTEREST to FINISHERS

Sept. 16-21. Annual Meeting, American Chemical Society, Convention Hall, Atlantic City, N. J.

Sept. 16-22. Pacific Coast Meeting, American Society for Testing Materials, Statler Hotel, Los Angeles, Calif.

Sept. 20-21. Semiannual Meeting, American Hot Dip Galvanizers' Association, Greenbrier Hotel, White Sulphur Springs, W. Va.

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Sept. 25-28. 1956 Iron and Steel Exposition and Annual Convention of the Association of Iron and Steel Engineers, Cleveland Public Auditorium, Cleveland.

Oct. 8-12. National Metal Congress & Exposition, American Society For Metals, Public Auditorium, Cleveland, Ohio.

Oct. 20. Annual Educational Session and Banquet, Philadelphia Branch, A. E.S., Benjamin Franklin Hotel, Philadelphia, Pa.

Oct. 21-24. 34th Annual Meeting and 21st Paint Industries Show, Federation of Paint and Varnish Production Clubs, Netherland-Hilton Hotel, Cincinnati, Ohio.

Oct. 28-Nov. 1. Fall Meeting, Electrochemical Society, Inc., Hotel Statler, Cleveland, Ohio.

Nov. 7-9. 18th Annual Shop Practice Forum, Porcelain Enamel Institute, Inc., Urbana-Lincoln Hotel and University of Illinois, Urbana, Ill.

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PRODUCT LITERATURE

73. Chromate Conversion Coatings
Reference File on Iridite Chromate Conversion Coatings. Describes complete line of conversion coatings. Allied Research Products, Inc., 4004-06 E. Monument St., Baltimore 5, Md.

74. Washing Machines
Information on Blakeslee metal washing and surface treatment machines. G. S. Blakeslee & Co., 1844 S. Laramie Ave., Chicago 50, Ill.

75. Plastic Fume Removal Systems
Bulletin F-7 describes and illustrates a variety of plastic fume removal systems. Haveg Industries, Inc., 914 Greenbank Rd., Wilmington 8, Delaware.

76. Phosphate Compound
Folder describes operating advantages and economies of Irco 66 Compound. International Rustproof Corp., 1575 Merwin Ave., Cleveland 13, Ohio.

77. Spray Gun
Information on the "Hollow Air" method of paint spraying, said to produce wider, more uniformly distributed spray pattern. Black Manufacturing Co., Livingston, N. J.

78. Automatic Polishing Machinery
Catalogs describe and illustrate variety of automatic polishing and buffing machinery. Acme Manufacturing Co., 1400 E. 9 Mile Rd., Detroit 20 (Ferndale), Mich.

79. Corrosion-Proof Floor Surfacing
Complete technical data on Corocrete floor surfacing material for protecting floors against corrosives. The Ceilcote Co., Inc., 4848 Ridge Rd., Cleveland 9, Ohio.

80. Buffs, Compounds
Descriptive catalogs on a line of cloth and sisal buffs, buffing compounds. Formax Mfg. Co., Detroit 7, Mich.

81. Radiant Heat
A 20-page booklet entitled "Radiant Heat —Applications Unlimited," describes some of the applications in which radiant heat has helped to improve efficiency and production speed. Fostoria Pressed Steel Corp., Dept. 822, Fostoria, Ohio.

82. Bright Brass Plating
Technical bulletin gives detailed information on True Brite Brass Solution, said to produce exceptionally uniform deposits of brass. True Brite Chemical Products Co., Box 31, Oakville, Conn.

83. Fans
Bulletin 545 discusses fans for industrial and ventilating applications. New York Blower Co., 32nd St. and Shields Ave., Chicago 16, Ill.

84. Gloves
Catalog presents complete line of industrial gloves. The Pioneer Rubber Co., 285 Tiffin Rd., Willard, Ohio.

85. Spray Decorating Machine
Brochure on an automatic air motivated single spray decorating machine. Conforming Matrix Corporation, 356 Factories Building, Toledo 2, Ohio.

86. Protect Plated Surfaces
Information on Neotex, an open pattern Neoprene rubber matting that is used to protect highly polished surfaces as a lining on surfaces where articles are processed or are in transit. Research Products Corp., Dept. 76, Madison 10, Wis.

87. Portable Plating Barrels
Information, specifications on portable plating barrels. Geo. A. Stutz Mfg. Co., 4410 Carroll Ave., Chicago 24, Ill.

88. Plating Rack Coatings
Bulletin gives advantages of Stanley plastisol plating rack coatings, including those specially formulated to resist chlorinated solvents. Stanley Chemical Co., 31 Berlin St., East Berlin, Conn.

89. Spray Booth Coatings
Details on "Liquid Envelope" strippable spray booth coatings for easily removing overspray from spray booth walls. Better Finishes & Coatings, Inc., 268 Doremus Ave., Newark 5, N. J.

90. Copper Anodes
Publication C-5 discussses properties of Anaconda "Plus-4" Anodes. The American Brass Co., Waterbury 20, Conn.

91. Tack Cloth
Details on various meshes of tack cloth for cleaning every type of surface prior to paint finishing. Bond Chemical Products Co., 2639 N. Clybourn Ave., Chicago 14, Illinois.

92. Acid-Alkali Proof Construction
Data on engineering and construction facilities for acid and alkali proof construction of processing and storage tanks and flooring. Chemsteel Construction Co., Inc., 301 Chemsteel Bldg., Walnut St., Pittsburgh 32, Pa.

93. Expander Wheel
Explains advantages of slotted Cosmo Expander Wheel. Chicago Rubber Co., Inc., 2620 N. Clybourn Ave., Chicago 14, Illinois.

94. Buffs
Description of buffs designed to run cooler, consume less compound. Schaffner Mfg. Co., Inc., Emsworth, Pittsburgh 2, Pa.

95. Quartz Ovens
Complete information on Clepco Quartz Ovens for baking paint. Quartz heaters used are said to emit that part of the spectrum most readily absorbed by paints. Cleveland Process Co., 1965 E. 57th St., Cleveland 3, Ohio.

96. Polishing, Buffing Compounds
Descriptive literature on a complete line of polishing and buffing compounds in bar, tube, extruded or liquid form. McAleer Manufacturing Corp., 101 S. Waterman, Detroit 17, Mich.

97. Bright Nickel
Outstanding features of Perglow bright nickel are detailed in literature which includes information on specific properties of this deposit, such as brightness, leveling, ductility, ease of operation, tolerance to impurities and ease of chromium plating over this nickel. Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6, Ohio.

98. Surface Finishing Machines
Exert uniform buffing pressures at any predetermined degree over flat or curved surfaces. Clair Manufacturing Co., Inc., Olean, N. Y.

99. Build Your Own Oven
Possibilities of building an oven from infra-red interlocking oven sections are illustrated. Dri-Quik Div., Dry Clime Lamp Corp., Greensburg, Ind.

100. Metal Treating Machines
Description of machinery used in the treatment of metal prior to plating and painting. Includes batch type and conveyorized washers, tumbling machinery, chip washers, pickling machines, sawdust dryers and accessories. Ransohoff, Inc., 610 N. Fifth St., Hamilton, Ohio.

101. Precious Metal Plating Solutions
Catalog lists precious metal plating solutions (rhodium and gold) and gives specifications for each. Includes tables of useful information about the properties of these metals. Sigmund Cohn Mfg. Co., Inc., 121 S. Columbus Ave., Mount Vernon, N. Y.

102. Cleaning, Stripping Compound
Booklet entitled "Dow Sodium Orthosilicate" describes use of this chemical in dip, soak and electrolytic cleaning. The Dow Chemical Co., Dept. AL 753K-2, Midland, Mich.

103. Barrel Finishing Manual
A 55-page manual on barrel finishing, containing useful information on the process and equipment involved. Norton Co., Worcester 6, Mass.

104. Cleaners
Catalog presents a complete line of metal cleaners, describes their properties and typical applications. Klem Chemicals, Inc., 14401 Lanson Ave., Dearborn, Mich.

105. Spray Booths
Bulletin gives information on advantages of Newcomb-Detroit spray booths. Newcomb-Detroit Co., Inc., 5761 Russell St., Detroit 11, Michigan.

106. Spray Phosphatizing
Bulletin 55-137 tells how objects too large to be phosphatized in a tank can get a corrosion-resistant phosphate coating with the Phosteem process. Neilson Chemical Co., 6561 Benson St., Detroit 7.

107. Paint Finishing Systems
Catalog illustrates advantages to be gained by the installation of a completely conveyorized, integrated finishing system. Equipment used — spray booths, washing equipment, drying and baking ovens, dust collecting systems — is illustrated and described. Peters-Dalton, Inc., 17908 Ryan Rd., Detroit 12, Mich.

108. Tumbling Machine
Information on specific advantages of the Baird Model H Tumbling Machine. The Baird Machine Co., Dept. PF, Stratford, Conn.

109. Vapor Degreasing Methods
Manual on vapor degreasing. Describes use, operation and maintenance of all types of vapor degreasing equipment. Describes the operation of every type of degreaser, including straight vapor, vapor and liquid, and special systems which embody vapor phases. Circo Equipment Co., Degreaser Div., 51 Terminal Ave., Clark (Rahway), N. J.

110. Chemicals You Live By
Interesting booklet gives story of chemicals manufactured by Diamond Alkali Co., their uses and something about how they are produced. Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14, Ohio.

111. Tumbling Grains
Information on how to produce more uniform surface finishes with Carborundum Tumbling Grains. Description of sizes and types available. Carborundum Co., Niagara Falls, N. Y.

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112. Barrel Finishing Equipment
Catalog describes and illustrates the company's line of barrel finishing equipment. The Henderson Bros. Co., 134 S. Leonard St., Waterbury, Conn.

113. Vinyl Chloride Coatings
A technical bulletin on Exon 470, a vinyl chloride resin. Data on the physical properties of the resin, its compatability with other resins, and with solvents and plasticizers, and the properties of the coatings produced from the paints made from this material are given. Chemical Sales Div., Firestone Plastics Co., Dept. 644K, Pottstown, Pa.

114. Organic Tumbling Compound
Booklet described Organ-Tu, a liquid organic tumbling compound. Finger Lakes Chemical Company, Etna, N. Y.

115. Tumbling Chips
Information on a wide variety of different sizes and shapes of tumbling chips. Universal Tumbling Supply Co., 14337 Mansfield, Detroit 27, Mich.

116. Horizontal Pressure Solution Filters
Bulletin NH-155, obtainable from Industrial Filter & Pump Mfg. Co., 5904 Ogden Ave., Chicago 50, Ill., gives a detailed description with illustrations and specifications of horizontal pressure filters, Type N.H.

117. Industrial Ovens
Catalog entitled "Ovens for Industry" shows a wide range of representative industrial oven installations. Photographs and drawings are used to illustrate the varying sizes and types of installations, providing a cross-section of the many kinds of ovens designed, fabricated and installed. Kirk & Blum Mfg. Co., 3116 Forrer St., Cincinnati 9, Ohio.

118. Stripper
Details on a recently-announced water-soluble, alkaline compound that is said to remove paint, phosphate coatings, rust, oils and other soils in one operation. Metasurf Corp., 12830 Eaton Ave., Detroit 27, Mich.

119. Sprayable Plastisol Coating
Bulletin SP-1 describes Unichrome "Super 5300" Plastisol Coating. The bulletin explains how the specially formulated plastisol can be sprayed in coatings up to 60 mils thick in a single application—even to cold vertical surfaces. Metal & Thermit Corp., Rahway, N. J.

120. Ultrasonics
Information on the use of ultrasonics for faster metal cleaning. Pioneer Central Div., Bendix Aviation Corp., Davenport, Iowa.

121. Centrifugal Dryer
Bulletin describes Model 20 Kreider Centrifugal Dryer, which spins dry a basket of small parts in 15 seconds. New Holland Machine Co., Dept. F-96, New Holland, Pa.

122. Barrel Finishing Methods
Folder entitled "Precision Barrel Finishing" describes barrel finishing methods and materials. Discussion includes use of cutting and descaling solutions, picking the right finishing materials, alkaline versus acid type compounds, burnishing solutions, water levels, and media-to-work ratios. The folder also discusses materials recommended for various procedures. Oakite Products, Inc., 54C Rector St., New York 6, N. Y.

123. Acid Resistant Brick Construction
Series of engineering drawings incorporating the latest technology in construction methods for acid resistant brick installations. Details of acid proof masonry construction for six typical installations: a pump base, column pad, tank outlets, bell and spigot joints, floors and trenches. Pennsylvania Salt Mfg. Co., 3 Penn Center Plaza, Philadelphia 2, Pa.

124. Bright Rhodium Process
A technical information bulletin describing the Sel-Rex Bright Rhodium Process may be obtained from Sel-Rex Precious Metals, Inc., Dept. PF-8, 229 Main St., Belleville 9, N. J. Contains such information as bath preparation and control, operating conditions, equipment requirements, determination of rhodium in plating solution and a table listing the physical properties of rhodium.

125. Black Oxide Coating
Lustre Black Oxide Coating for iron and steel, applied from a single bath, produces corrosion resistant, attractive black finish. Standard Research, Inc., 464 Grand Ave., New Haven 13, Conn.

126. Sanding Equipment
Folder gives details on air and electrically driven sanders. Specifications are given for each model, along with general information on installation, operation and care. National Air Sander, Inc., 2818 Auburn St., Rockford, Ill.

PRODUCT LITERATURE

127. Tumbling Abrasives
Folder describes advantages of Exolon Tumbling Abrasives. The Exolon Co., 943 E. Niagara St., Tonawanda, N. Y.

128. Electric Heating of Plating Solutions
Bulletin No. 750, illustrating and describing electric heaters designed for the heating of cleaning, pickling and plating solutions is available from Edwin L. Wiegand Co., 7522 Thomas Blvd., Pittsburgh 8, Pennsylvania.

129. Handling Paint
Bulletin describes advantages, construction features of DeVilbiss Paint Pumps. These pumps handle materials directly from the drum, can serve as many as 18 spray guns. The DeVilbiss Co., Toledo 1, Ohio.

130. Platecoils
Advantages of embossed tube design heat exchanger for process heating and cooling are discussed in Bulletin P50. Platecoil Div., Tranter Mfg. Inc., Lansing 4, Michigan.

131. Buffing, Grinding Wheel Speed Chart
Handy pocket dial gives quick calculation of wheel speeds. Hanson-Van Winkle-Munning Co., Church St., Matawan, New Jersey.

132. Using Coated Abrasives
Booklet illustrates how several appliance manufacturers are cutting costs and improving finishes with 3M coated abrasives. Minnesota Mining and Manufacturing Co., Dept. F6-189, 900 Fauquier St., St. Paul 6, Minn.

133. Mechanical Container Shaker
Data sheet shows several models of machines designed to mix paint thoroughly without opening the container. Miracle Paint Rejuvenator Co., 127 E. 9th St., St. Paul 1, Minn.

134. Immersion Heater
Corrosion-resistant immersion heater features built-in control for accurate and dependable regulation of solution temperature. N. J. Thermex Co., Inc., 537 Bergen St., Harrison, N. J.

135. Solution Filters
Description of filters designed to withstand the corrosive action of plating solutions. Sethco Mfg. Co., 70-72 Willoughby St., Brooklyn 1, N. Y.

136. Screen Process Dryer
Data sheet tells advantages, gives specifications for General Thermo-Jet Dryer. General Research and Supply Co., 572 S. Division Ave., Grand Rapids 3, Mich.

137. Porcelain Enamel Pretreatment
Information on Parker Pre-Namel 420, a pretreatment for surfaces to be porcelain enameled. Parker Rust Proof Co., 2172 E. Milwaukee, Detroit 11, Mich.

Opportunity Section

Space in this section is available for ***Classified Advertising.*** For rates and other information address: **PRODUCTS FINISHING, 431 Main St., Cincinnati 2, Ohio**

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THE SAFE, FAST, ECONOMICAL WAY TO STRIP FERROUS BASE METALS

. . . with Mac Dermid's METEX STRIP AID!

You strip nickel, brass, copper, zinc, cadmium or tin from ferrous metals safely, quickly and at low cost with METEX STRIP AID.

TRY THIS SIMPLE TEST:

Immerse a ferrous metal part in METEX STRIP AID . . .

Leave it as long as you want—even overnight!

The result: no attack . . . base metal's good as new!

METEX STRIP AID is water-soluble and may be used either hot or cold. No current needed. . . . parts may be cleaned or replated with no loss of lustre on the base metal. Work can be stripped in bulk, barrels or on racks.

Write Mac Dermid for more information. Let a Mac Dermid representative show you the *safe way* to strip ferrous metals.

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Incorporated
WATERBURY 20, CONNECTICUT

Complete Suppliers to the Metal Finishing Industry

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THERE IS A BETTER WAY TO GET LIFETIME PROTECTION AGAINST RUST—USE DETREX Paintbond

Corrosion is the arch enemy of your product's paint finish . . . it is the direct cause of peeling, flaking and unsightly stains. With Paintbond you can effectively (and economically) foil the demon rust for a lifetime regardless of the conditions under which the product is normally used!

Paintbond is a zinc-iron phosphate coating, applied directly to the metal prior to painting. Applied by either dip or spray, Paintbond provides a moisture-proof fine-grain crystalline coating which is chemically interlocked with the metal surface. When paint is applied over it, the paint flows into the microscopic crevices between the crystals and is securely interlocked with the metal.

Paintbond thus puts an end to peeling and flaking, thoroughly seals the metal from moisture. Even when the paint is scratched through, Paintbond confines rust to the exposed metal only! No more spreading rust or ugly stains around the scratch.

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If you paint your product it will pay you to investigate the advantages of Paintbond. Just drop us a line or call the nearest Detrex sales office for full particulars.

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